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OTHER CONTAMINATION SOURCES
DECEMBER 1990

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VOLUME II - APPENDIXES



Prepared by:

WOODWARD-CLYDE CONSULTANTS

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U.S. ARMY PROGRAM MANAGER'S OFFICE FOR ROCKY MOUNTAIN ARSENAL CONTAMINATION CLEANUP

Rocky Mountain Arsenal Information Center Commerce City, Colorado

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APPENDIX A GEOLOGY, HYDROLOGY, AND HISTORICAL CONTAMINATION STUDIES

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APPENDIX A GEOLOGY, HYDROLOGY, AND HISTORICAL CONTAMINATION STUDIES

This section contains details concerning the geology and hydrogeology of RMA in general and at the four hot spots investigated under this task order. Additional information concerning each site is contained in the study area reports.

A.1 REGIONAL GEOLOGY

The RMA occupies approximately 27 square miles within the Colorado Piedmont section of the Great Plains physiographic province. The surficial deposits of this area are characterized primarily by a veneer of wind-blown and alluvial materials. Most of the topography at the Arsenal is gently rolling; however, there are several prominent hills that contain outcrops of resistant bedrock (Costa 1982).

The Rocky Mountain Arsenal lies within the Denver Basin, one of the largest structural basins in the Rocky Mountain region. It covers approximately 60,000 square miles in portions of Colorado, Nebraska, Wyoming, and Kansas. The Denver Basin is an asymmetrical north-south trending syncline with its structural axis close to and parallel to the Front Range. Rock units on the west flank of the basin dip gently to the east though the dip becomes progressively steeper near the boundary between the Front Range uplift and the Denver Basin (Hansen 1982). The east flank of the basin generally dips to the west at one degree or less (Sonneberg 1982).

The Denver Basin is filled with approximately 15,000 feet of sediments ranging in age from Cambrian to Quaternary. Several major transgressions followed by periods of emergence resulted in the deposition of both marine and continental sediments (Haun 1965) consisting of conglomerate, sandstone, siltstone, shale, limestone, dolomite, coal, lignite, and volcaniclastic sediments. The Laramide Orogeny marked the last retreat of the marine seaway and, thus, sediments from the upper Cretaceous and the lower Tertiary record the final regression of the inland sea (Weimer 1973).

A.1.1 Denver Formation

The Denver Formation, which subcrops and occasionally outcrops at the Rocky Mountain Arsenal, was originally as much as 900 feet thick, but due to subsequent erosion, it now ranges from 250 to 500 feet at the Arsenal (May 1982). It was derived predominately from the erosion of andesitic and basaltic rocks and was deposited in fluvial environments, and as lacustrine deposits on an extensive piedmont plain (Romero 1976).

A-1

Materials in the Denver Formation include olive-gray, brown, and green-gray interbedded claystone, siltstone, sandstone, conglomerate, carbonaceous clay shale, low-grade coal, and lignite. Volcaniclastic material is also present in the Denver Formation and consists of angular to subangular lithic fragments and minerals in a fine-grained clay matrix. The clay matrix is bentonitic and is probably the weathering product of volcanic ash (May 1982).

Individual aquifers within the Denver Formation range in thickness from several inches up to 60 feet. They are generally discontinuous, lenticular, and consist of poorly cemented, medium- to fine-grained sandstone, which grade vertically and laterally into siltstone and clay shale (May 1982).

A.1.2 Quaternary Deposits

Unconsolidated sediments of Quaternary age uncomformably overlie the Denver Formation at the Arsenal. There are, however, a few locations where bedrock is exposed at the surface near topographic highs. The upper surface of the Denver Formation is a paleotopographic or erosional surface that was incised by ancient stream channels. These paleochannels were filled by unconsolidated surficial deposits (Costa 1982). The surficial deposits, previously referred to as Quaterna, y alluvium or the alluvial aquifer, are up to 130 feet thick and consist of alluvium, loess, and eolian deposits.

A.1.3 Alluvium

The alluvial deposits are generally composed of yellowish-brown to very pale orange clays, silts, sands, gravels, and boulders. Coarser alluvial material is found in the paleochannels (May 1982). The alluvium is generally unconsolidated except where calcium carbonate has cemented sand and gravel into a conglomerate. The grain size of the alluvial material ranges from clay size to boulders. The sands are subangular to subrounded quartz with mica, heavy minerals, and chert. According to the Unified Soil Classification System, they are predominately SM (sand-silt mixtures) and SP (poorly graded sands) and often contain gravel. The sands are lenticular and grade laterally and vertically into clay, silt, and gravel (May 1982).

A.1.4 Loess/Eolian Deposits

Loess and other eolian deposits of Pleistocene and Holocene age are widely distributed at the RMA. The loess is generally less than 10 feet thick but may be up to 20 feet thick in the eastern part of the area. It consists of yellowish-brown to light grayish-brown sandy silt and may contain large amounts of clay. The other eolian

1

deposits are generally 10 to 20 feet thick but may be as much as 40 to 50 feet thick. They consist of light-brown fine sand, sandy silt, and clay (Lindvall 1980).

A.2 REGIONAL HYDROLOGY

The Rocky Mountain Arsenal lies within the South Platte River drainage basin. The river is located several miles to the west and northwest of the Arsenal.

Several tributary drainages flow northwest across the Arsenal to the South Platte River. Groundwater at the Arsenal occurs in the Quaternary surficial deposits and in several bedrock aquifers. The aquifers of primary concern at the Rocky Mountain Arsenal, however, are the Quaternary deposits and portions of the underlying Denver Formation. The deeper bedrock aquifers are separated from the Denver Formation by 50 to 100 feet of shale called a "buffer zone," which acts as an aquitard (Romero 1976).

Groundwater at the Rocky Mountain Arsenal generally flows from the southeast to the northwest and eventually discharges into the South Platte River. However, there are local variations in flow direction (May 1982) believed to be caused by local bedrock paleotopography and the groundwater mound that exists beneath the South Plants area (May 1982). Groundwater in the unconsolidated Quaternary alluvial aquifer is found under unconfined conditions. Groundwater in the Denver Formation is found under both unconfined and confined flow conditions at the Arsenal depending on the degree of weathering and nature of the contact between the alluvial aquifer and the upper Denver Formation. If a Denver Formation sandstone unit subcrops below the saturated alluvium, the base of the subcropping sandstone is considered the base of the unconfined flow system.

The hydraulic conductivity of the two aquifers varies considerably. The hydraulic conductivity of the alluvium has been measured at between 9.08 x 10⁻¹ to 2.4 x 10⁻³ cm/sec. The lower hydraulic conductivity values were found in the Basin A area. Hydraulic conductivity measured in the Denver Formation yielded values ranging from 10⁻⁷ cm/sec for clay shales to as high as 10⁻³ cm/sec to 10⁻⁴ cm/sec for sands (May 1982).

Due to the contrast in hydraulic conductivity between the Denver Formation and the alluvium, groundwater flow and contaminant transport through unfractured bedrock is assumed to be relatively slow compared to flow and transport in either saturated alluvium or in fractures in the Denver Formation (Stollar 1988). Within the alluvial unit, the paleochannels generally have higher hydraulic conductivities than the surrounding alluvial materials due to the coarser materials in the paleochannels. These channels appear to serve as conduits that move alluvial groundwater at higher rates and volumes than in other parts of the unconfined system (May 1982). The primary

groundwater flow components at the Arsenal generally follow the paleochannels in the alluvium; however, flow is not restricted to only the paleochannels. A great deal of groundwater flow occurs over channel divides and through the Denver Formation (May 1982).

A.3 M-1 BASINS SITE GEOLOGY

The M-1 Basins are located on a paleotopographic high near the headwaters of a series of paleodrainages that originate in the upland area occupied by Section 1.0. Two significant stratigraphic units have been identified at the site. These are the Quaternary Alluvium and the Cretaceous-Tertiary Denver Formation.

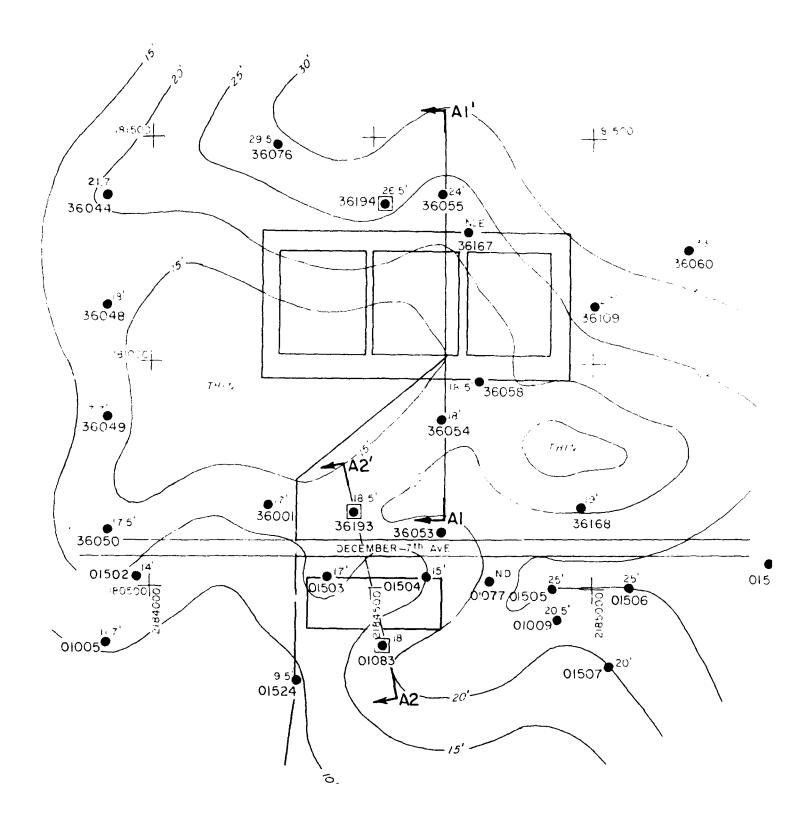
The surficial materials in the M-1 Basins are 10 to 20 feet thick and unconformably overlie the Denver Formation. The entire area around the basins is covered with a veneer of imported soil. The soil cover over the waste material in the basins ranged from 2 to 4 feet thick. Figure A-1 is an alluvial isopach map of the M-1 Settling Basins and Lime Settling Basins areas. Figure A-2 is a geologic cross-section of the M-1 Settling Basins area.

The unconsolidated alluvial material is composed of yellowish-brown to grayish-brown, fine-grained to medium-grained, sub-angular, alluvial, eolian, and alluvial sands, silts, and clays, with some minor amounts of gravel.

The Denver Formation, to the depth penetrated, is composed of weathered, dark to dusky brown, hard dense, blocky claystone interbedded with medium gray, hard, sandy to gravelly siltstone and lignite. The contact between the alluvial unit and the Denver Formation is generally characterized by a claystone; however, it may also be marked by siltsone or lignite. The elevation of the contact between the alluvial soil and the top of the Denver Formation is variable at RMA. In the M-1 Basins area, the contact was found between an elevation of approximately 5,246 feet and 5,254 feet above MSL. Figure A-3 is a contour map of the top of the Denver Formation.

A.3.1 Site Hydrology

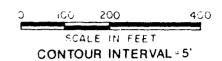
Both the alluvial and bedrock units are known to be water-bearing units in the M-1 Basins area. Previous investigations conducted at RMA have concluded that the alluvial aquifer is unconfined and that the Denver Formation may be partially confined in some zones beyond the upper weathered zone (Ebasco Services, Inc. 1989a). The weathered portion of the Denver Formation is apparently in contact with the alluvial aquifer. Since



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36168

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20.5°

01506

30" PIPELINE

MONITORING WELL LOCATION

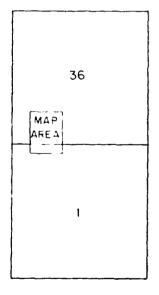
NEW MONITORING WELL LOCATION

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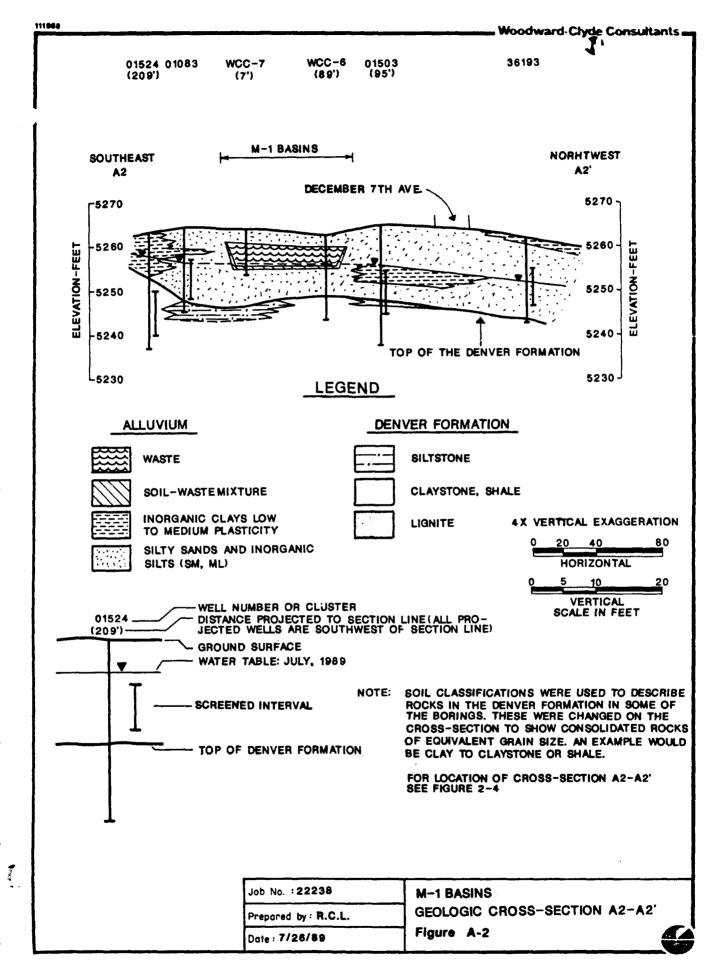
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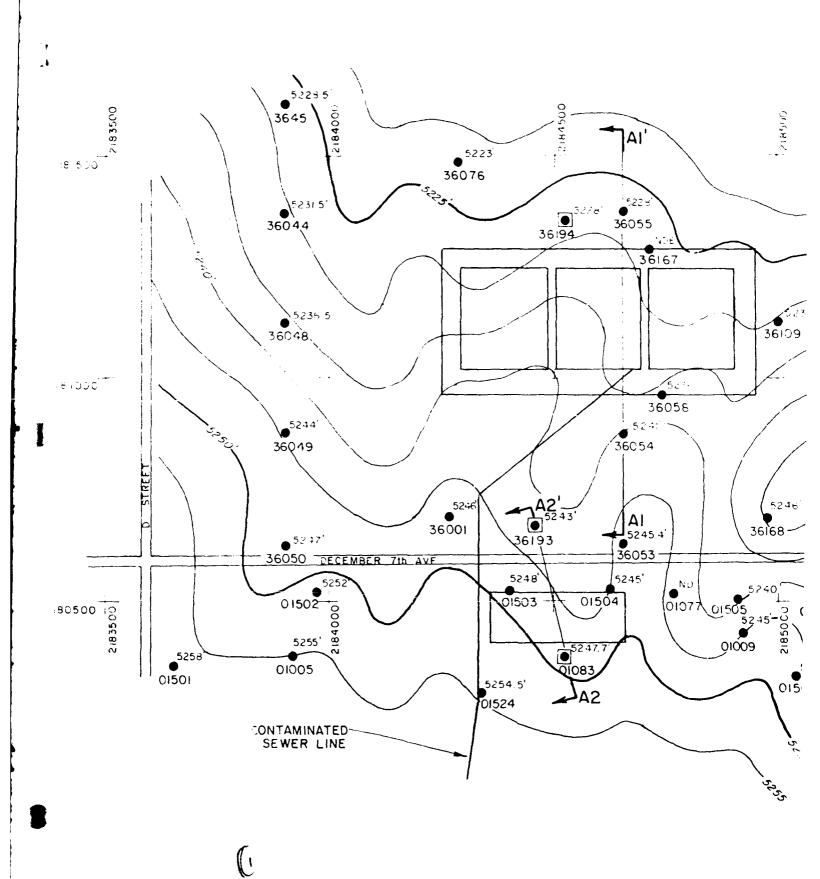
30 - ISOPACH LINE

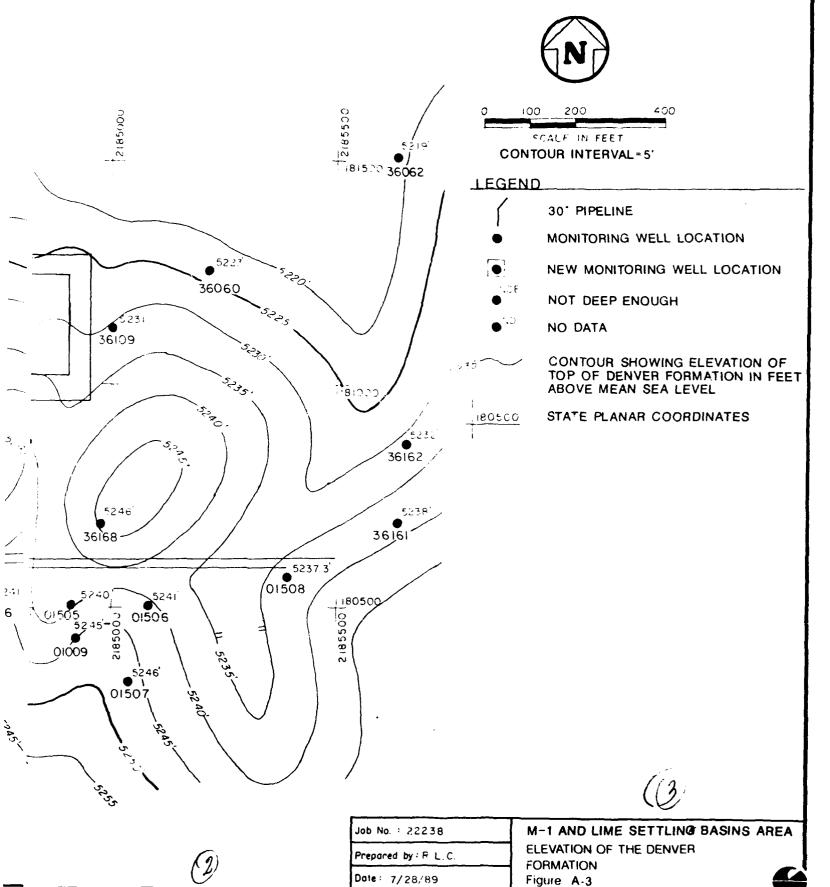


Job No. : 22238	M-1 SETTLING BASINS AND
Prepared by: R.L.C	LIME SETTLING BASINS AREA ALLUVIAL ISOPACH MAP
Date: 7/26/89	Figure A-1









this investigation focused primarily on evaluating impacts to the alluvial aquifer, the discussion will be limited to the characteristics of the unconfined alluvial aquifer.

In the M-1 Basins area, groundwater flow in the alluvial aquifer is apparently toward the north and possibly slightly northwest due to the influence of localized mounding of groundwater and paleotopographic influences in the South Plants area. The local groundwater gradient is in the range of 0.008 to 0.011 ft/ft. Due to seasonal variations and local topography, the top of the groundwater ranges from approximately 5 to 10 feet below ground surface. The average saturated thickness of the alluvial aquifer ranged from 6 feet to approximately 15 feet in the M-1 Basins area. Figure A-4 is a contour map of the alluvial aquifer potentiometric surface in the M-1 Settling Basins and Lime Settling Basins areas.

A.3.2 Previous Soil Investigations

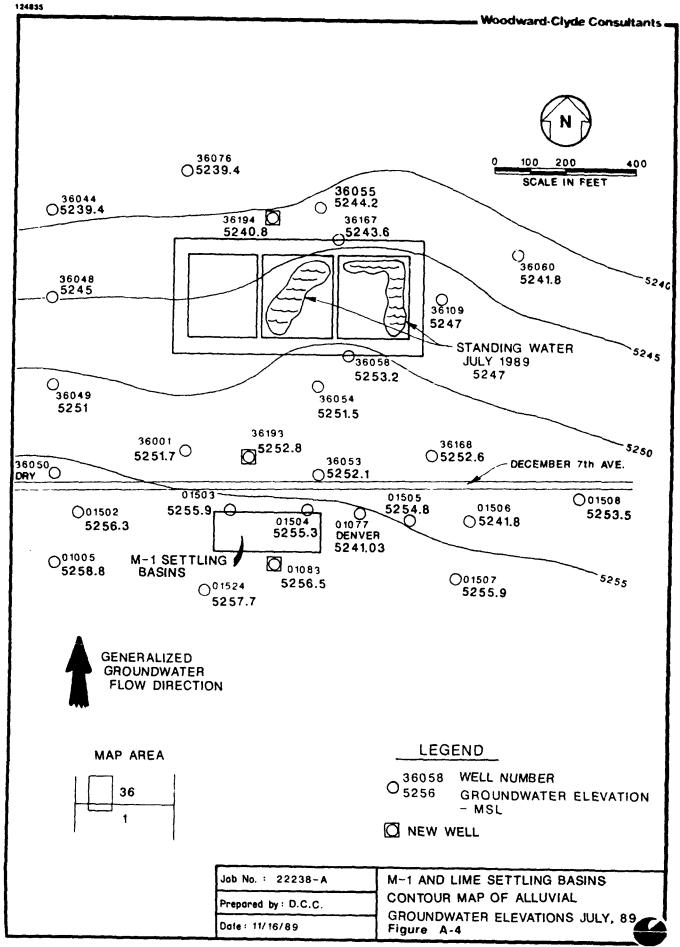
The M-1 Settling Basins were investigated by the Army's consultant, Ebasco, in 1987 and by Shell's consultant, Morrison-Knudsen Engineers (MKE) in 1988. Twenty-six soil and waste samples were taken from six borings within or near the M-1 Settling Basins during the two investigations. The locations of these borings are shown in Figure A-5. The samples were analyzed for volatiles, semivolatiles, ICP metals, arsenic, mercury, and thiodiglycol.

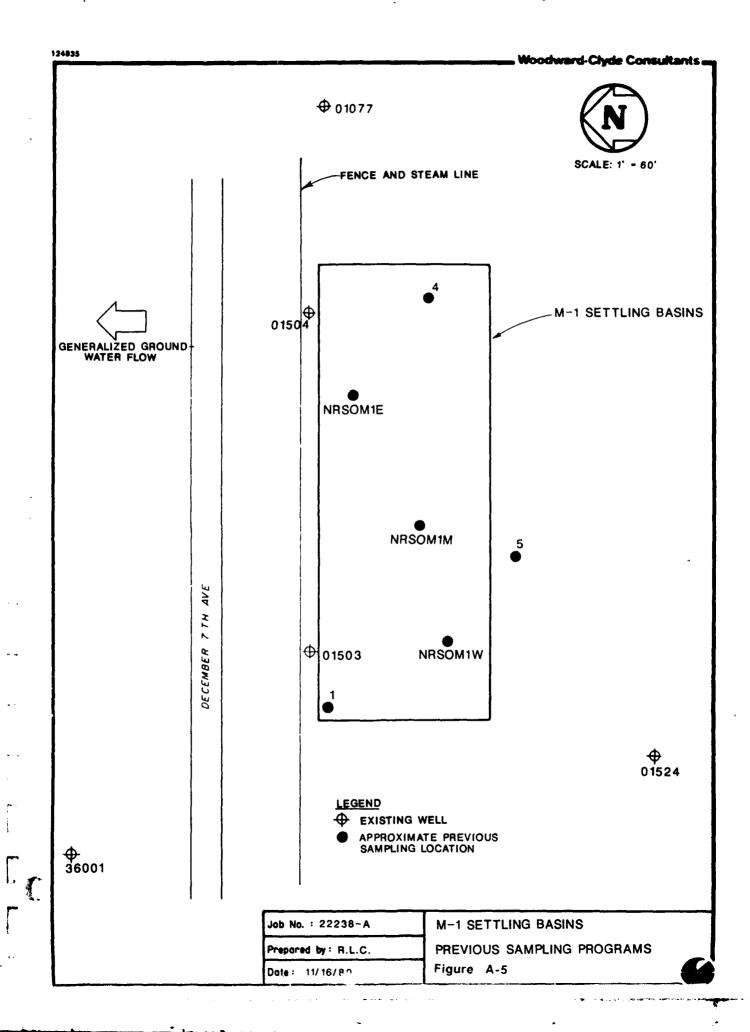
A.3.3 Previous Groundwater Investigations

Several groundwater monitoring wells have been installed to monitor the alluvial unit in the vicinity of the M-1 Basins. Well Nos. 01503 and 01504 are located in the berm immediately downgradient of the M-1 Basins; Well No. 01524 is located approximately 100 feet upgradient of the western-most basin; Well No. 36001 is located approximately 100 feet northwest (downgradient) of the western-most basin; and Well No. 01077 is located approximately 100 feet east of the basin area. The locations of these wells are shown in Figure A-5. Samples from the wells were analyzed for filtered and non-filtered arsenic and mercury, as well as volatiles, semivolatiles, and pesticides.

A.3.4 Nature and Extent of Soils Contamination

Soil samples collected and analyzed during the previous investigations indicated high concentrations of arsenic and mercury in the soil in and around the M-1 Basins at depths from 0.5 foot to approximately 7.0 feet. The concentration of arsenic and mercury in samples taken within the basins was variable, ranging from 0.1 to





11 percent. Concentrations of these constituents are reduced at depths below about 10 feet. Table A-1 shows a summary of the contaminants identified in soil samples taken during the previous studies.

A.3.5 Nature and Extent of Groundwater Contamination

Groundwater samples collected and analyzed during the previous studies indicate that a high concentration of arsenic in unfiltered groundwater samples downgradient of the M-1 Basins area. Unfiltered water samples from Well Nos. 01503 and 01504 indicate up to 59,000 µg/l arsenic, while the filtered samples indicate 0.01 µg/l for each well. However, the findings of the field program presented in Section 4.0 of this report indicate that most of the arsenic detected in downgradient wells passed through a 0.45 micron filter. Water samples from wells located upgradient and adjacent to the basins did not indicate elevated concentrations of either filtered or nonfiltered arsenic or mercury. Table A-2 shows a summary of the contaminants identified in water from wells in the M-1 Basins area during previous studies.

A.4 36-17 TRENCHES SITE GEOLOGY

Site 36-17N lies in an upland area of RMA along the west flank of a prominent ridge that forms the eastern boundary of Basin A. The Site 36-17 trenches are located along the west flank of the bedrock ridge although some of the disposal trenches in Anomoly C may straddle the crest of the ridge. There are two stratigraphic units of interest beneath Site 36-17: the Quaternary Alluvium and the Denver Formation.

The Quaternary Alluvium is composed of fine-grained, medium-grained, and coarse-grained alluvium on the basis of the Unified Soil Classification System (USCS) scheme. In general, the fine-grained material corresponds to alluvial clay horizons, medium-grained material to eolian sand and silts, and coarse-grained material to fluvial sands and gravels of the Verdos and Piney Creek Alluvium.

In Site 36-17 the most prominent member of the alluvial unit is the medium-grained eolian sand and loess, which ranges from about 5 to 30 feet thick. It consists of interbedded tan to yellowish-brown, grayish-brown, reddish-brown, black, silty sand, clayey silt, silt, clay, and sand. Typically, a clay-rich alluvial unit is found above the contact between the Alluvium and the underlying Denver Formation bedrock. Figure A-6 is an alluvial isopach map of the Site 36-17 trench disposal area.

The other significant stratigraphic unit in the study area is the Cretaceous-Tertiary Denver Formation, which represents bedrock. Regionally, the bedrock surface of the Denver Formation slopes to northwest. However,

A-11

TABLE A-1 SUMMARY OF CONTAMINANTS (HISTORICAL DATA) IDENTIFIED IN SOIL BORINGS IN M-1 SETTLING BASINS AREA

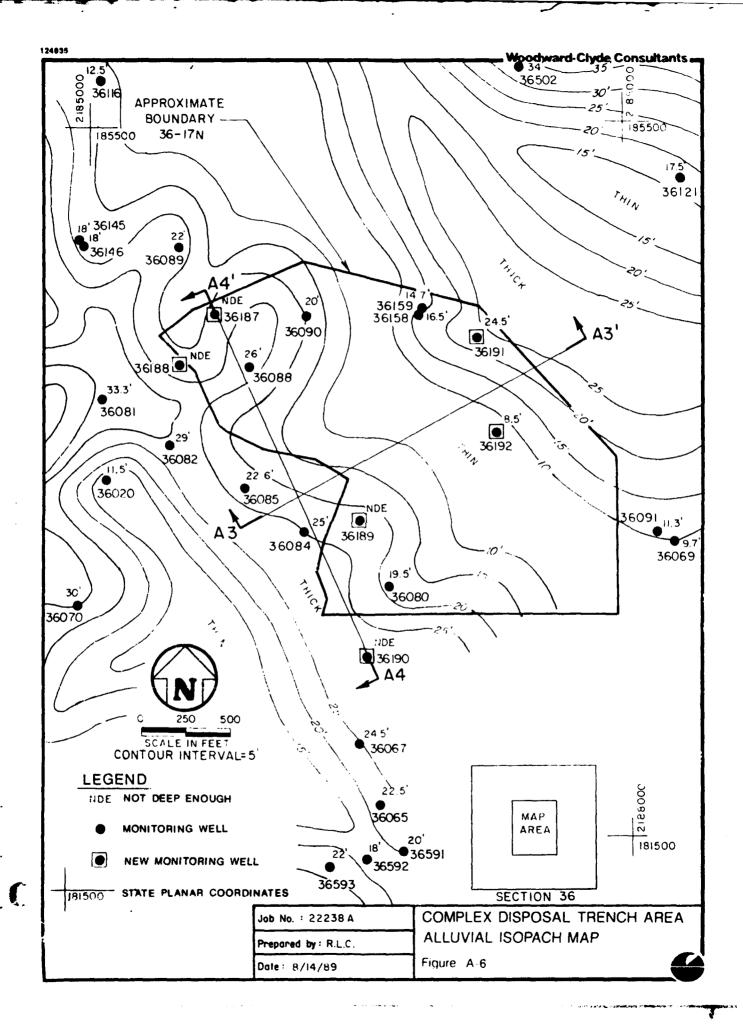
Soil Contaminant	Highest Concentration Encountered in any of the Borings	Boring No.	Sample Depth (ft)
Volatiles (µg/g)			
Bicycloheptadiene	600	5	9-10
Dicyclopentadiene	4,000	5 5	4-5
Semivolatiles (µg/g)			
Aldrin	80	5	0-1
Dicyclopentadiene	400	5	4-5
Dieldrin	100	5	0-1
Hexachlorocyclopentadiene	3,000	4	0-1
Isodrin	10	5	0-1
ICP Metals (ug/g)			
Cadmium	3,900	1	2-3
Chromium	23	1	10.7-11.7
Copper	21	5	0-1
Lead	64	1	2-3
Zinc	76	5	4-5
Arsenic (µg/g)	110,000	4	4-5
Mercury (µg/g)	54,000	MKE No. NRSO1M1E	5
Thiodiglycol (ug/g)	None detected		

Note: This data is from all available data as of 11/89.

TABLE A-2 SUMMARY OF CONTAMINANTS (HISTORICAL DATA) IDENTIFIED IN MONITORING WELLS IN M-1 SETTLING BASINS AREA

Substances Analyzed	Well No.			
in Groundwater Samples	01502	01503	01504	01506
Dicyclopentadiene	<10	2,319	34,470	173
,,	(1979)	(1979)	(1979)	(1979)
Bicycloheptadiene	84	7,438	2,379	ND
•	(1979)	(1983)	(1983)	
Dieldrin	1.42	1.26	1.42	1.27
	(1979)	(1983)	(1979)	(1979)
Aldrin	<0.2	1.58	0.75	1.59
	(1979)	(1983)	(1979)	(1983)
Isodrin	<0.2	2	2	0.47
	(1983)	(1983)	(1983)	(1983)
Arsenic (filtered)	< 0.050	0.01	0.01	0.07
	(1979)	(1979)	(1979)	(1979)
Total arsenic	<50	23,400	59,300	<50
	(1979)	(1979)	(1979)	(1979)
DBCP	5.06	<10	<10	16
	(1979)	(1979)	(1979)	(1979)
Mercury	<1.0	<1.0	29	<1.0
	(1979)	(1979)	(1979)	(1979)
Tetrachloroethylene	1,000	630	28	23
	(1988)	(1979)	(1979)	(1979)
Trichloroethylene	800	210	4	5,000
-	(1988)	(1979)	(1983)	(1988)

Note: all values in µg/l



at Site 36-17, the bedrock surface slopes to west-southwest into Basin A. Figures A-7 and A-8 are geologic cross-sections through the Site 36-17 trench disposal area. Figure A-9 is a contour map of the top of the Denver Formation.

The Denver Formation to the maximum depth penetrated consists predominately of medium to dark brown, reddish-brown, grayish-brown, and greenish-gray, hard, blocky shale and claystone with interbedded lenses of sandy to gravely siltstone, tan to yellowish-brown fine to coarse grained, well cemented sandstone, and a stiff, tan, volcaniclastic unit at the top of the Denver Formation.

Before and during the deposition of the alluvial material, an ancient stream system eroded the surface of the Denver Formation. As a result, the contact between the two stratigraphic units is highly irregular and in Site 36-17 is often marked by the volcaniclastic unit of the Denver Formation. The volcaniclastic unit caps the prominent northwest trending bedrock ridge that traverses the area.

Significant features of the volcaniclastic unit include:

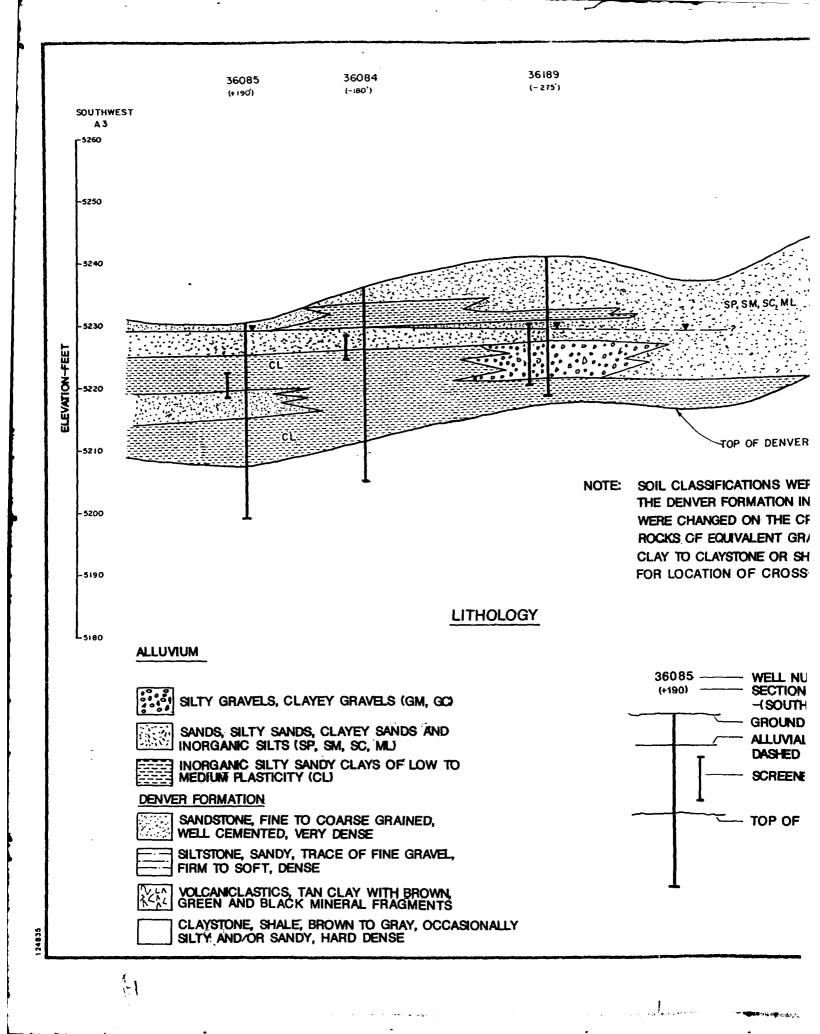
- Zones of iron oxide enrichment from weathering of volcanic glass and malic materials (may retard metals migration)
- Local zones of poorly defined fracturing, with or without limonic encrustations (may affect groundwater flow)
- Presence of large volcanic fragments characterize the area
- The unit is resistant to erosion

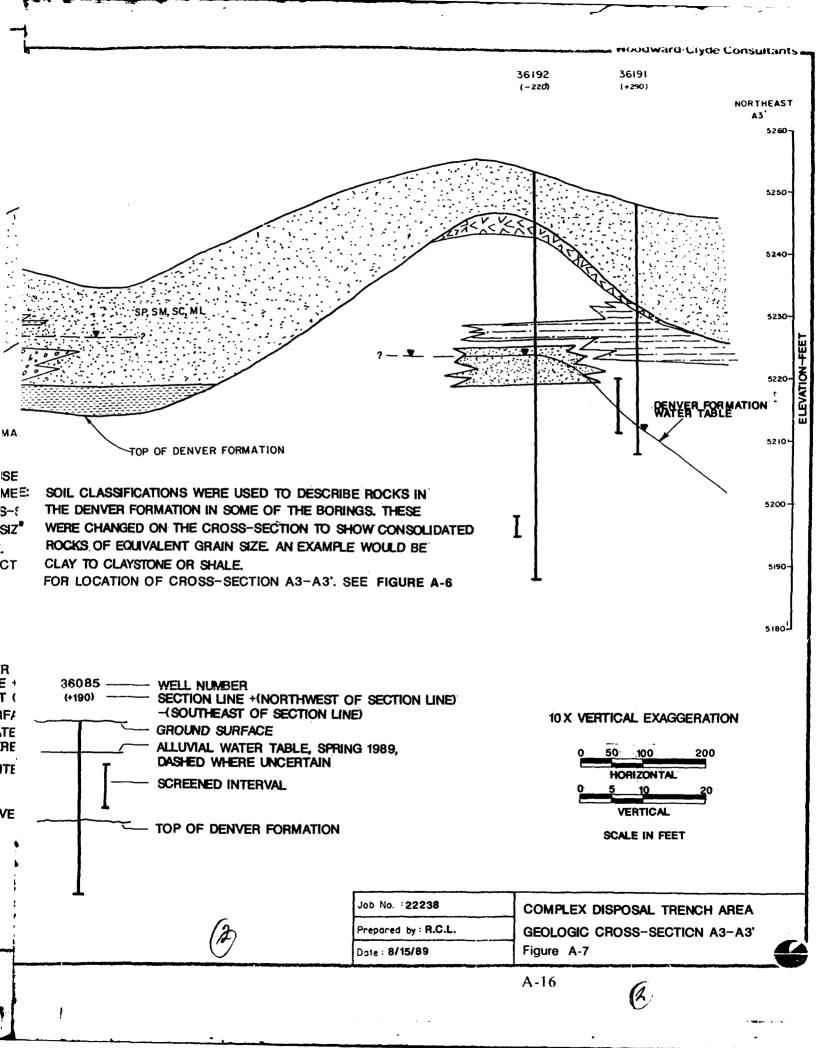
Within Site 36-17, only two Denver Formation units have been confirmed to subcrop. These are a claystone/shale unit and the volcaniclastic unit.

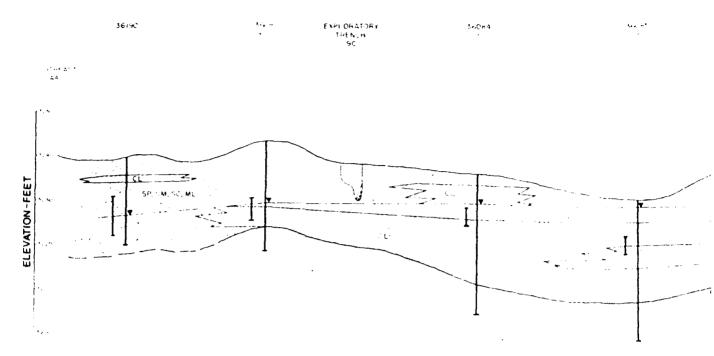
A.4.1 36-17 Trenches Site Hydrology

The discussion in this section addresses the hydrologic system in Site 36-17 and how it relates to evaluating the need for an IRA on the disposal trenches. Portions of the text have been excerpted from the CSAR (Ebasco 1989). A more detailed discussion of the hydrology of the CSA is contained in that report.

A-15



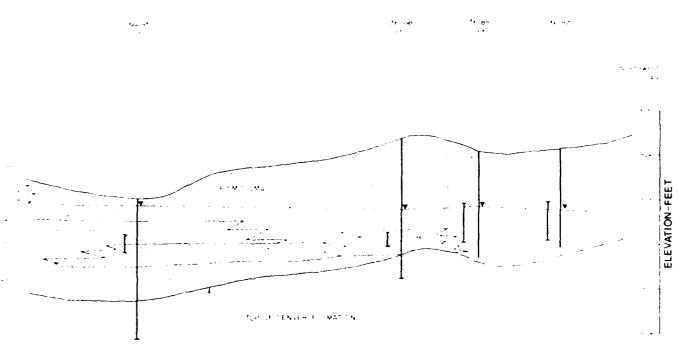




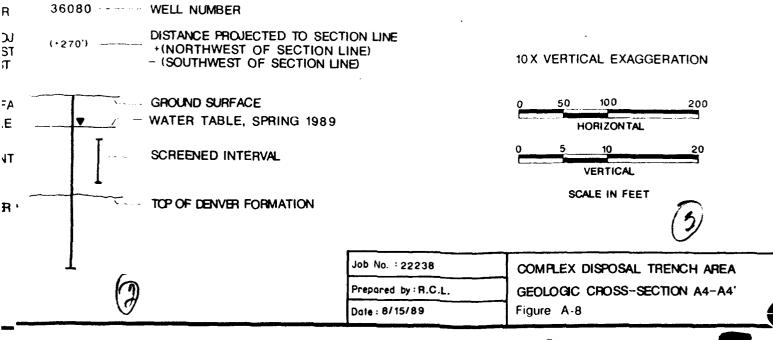
NOTE: SOIL CLASSIFICATIONS WERE USED THE DENVER FORMATION IN SOME WERE CHANGED ON THE CROSS-S CONSOLIDATED ROCKS OF EQUIVAL AN EXAMPLE WOULD BE CLAY TO FOR LOCATION OF CROSS-SECTION

LEGEND

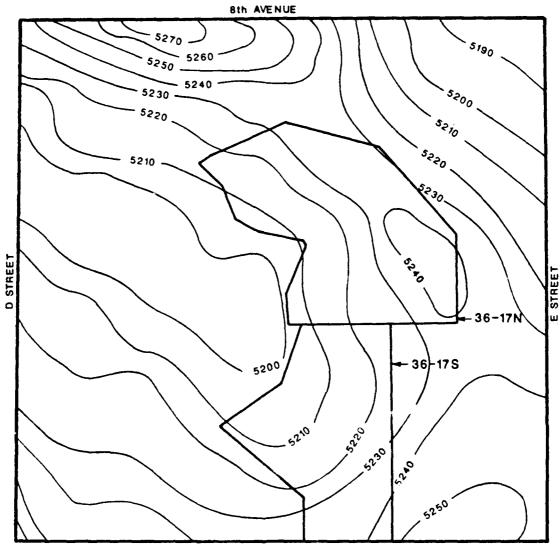
EXPLORATORY TRENCH, DISPOSAL TRENCH IS PERPENDICULAR TO SECTION LINE ALLUVIUM	36080 WELL NUI (+270') DISTANCE +(NORTH - (SOUTH
SANDS, SILTY SANDS, CLAYEY SANDS AND INORGANIC SILTS (SP, SM, SC, ML) INORGANIC SILTY SANDY CLAYS OF LOW TO MEDIUM PLASTICITY (CL)	GROUND WATER T
INORGANIC CLAYS OF HIGH PLASTICITY (CH) DEBRIS MATERIAL FOUND IN TRENCH CONSISTING OF WOOD, BURNED WOOD, METAL AND EMPTY BOTTLES	SCREENE
DENVER FORMATION CLAYSTONE, SHALE, BROWN TO GRAY OCCASIONALLY SILTY AND/OR SANDY, HARD DENSE	TOP OF D



DICLASSIFICATIONS WERE USED TO DESCRIBE ROCKS IN THENVER FORMATION IN SOME OF THE BORINGS. THESE IC CHANGED ON THE CROSS-SECTION TO SHOW T OLIDATED ROCKS OF EQUIVALENT GRAIN SIZE. Y'S AMPLE WOULD BE CLAY TO CLAYSTONE OR SHALE. 1-OCATION OF CROSS-SECTION A4-A4'. SEE FIGURE A-6







DECEMBER 7th AVENUE



NOTE: ELEVATIONS REFLECT FEET ABOVE MEAN SEA LEVEL

Job No. : 22238-A

Prepared by: R.C.C.

Date: 11/16/89

SECTION 36

ELEVATION OF THE DENVER FORMATION

Figure A-9

The hydrologic regime in Site 36-17 is affected by four major components: (1) surface water, (2) vadose zone, (3) alluvial aquifer/unconfined weathered Denver Formation flow system, and (4) unweathered Denver Formation partially confined aquifer. Emphasis here is placed on characterizing the alluvial and unconfined Denver Formation aquifers because these zones represent the dominant component of the hydrologic system. They also represent the first water in the saturated zone that any contaminants moving through the vadose zone would encounter.

A.4.2 Surface Water

The surface water component in this area is limited to the infrequent collection of runoff in low-lying areas during major rain storms or snowmelt. No perennial surface water bodies exist in the area. An area in Site 36-17S adjacent to the parking lot north of December 7th Avenue is one area that occasionally holds ponded water after a substantial rainfall.

A.4.3 Vadose Zone

The vadose zone is the unsaturated material between the ground surface and the top of the saturated zone or perennial water table. In Site 36-17, this zone is composed of either unconsolidated surficial deposits or the upper Denver Formation. The vadose zone is important to this study because it is through this zone that contaminants must travel to reach the water table.

The rate of deep percolation in the study area is of particular importance in characterizing the vadose zone and evaluating contaminant migration. In Site 36-17, deep percolation includes recharge to the unconfined aquifer only from natural precipitation, runoff, and snowmelt. It does not include enhanced local infiltration derived from long-term, free-standing surface water such as lakes or streams since they do not exist in the area.

A detailed investigation conducted by MKE (1988a) concluded that infiltration from precipitation rarely percolates downward to reach the alluvial water table. The occurrence of recharge related to infiltration of precipitation is highly variable and dependent upon a number of unrelated factors. That report concluded that groundwater received only about 0.25 inch per year of recharge from infiltration of precipitation.

A.4.4 Alluvial Aquifer

For this report the alluvial aquifer is defined as the saturated portion of the alluvial unit and the unconfined, weathered portion of the Denver Formation that is in direct hydrologic communication with the alluvial unit. In the study area, groundwater in the alluvial aquifer flows north and northwest under unconfined conditions into the buried paleochannel that underlies Basin A, then northwest out of the Basin A neck. The hydraulic gradient in the study area is in the range of 0.003 to 0.03 foot per foot. The depth from the ground surface to the water table in the alluvial aquifer ranges from less than 5 feet to approximately 20 feet. Figure A-10 shows the alluvial aquifer groundwater contours in Section 36.

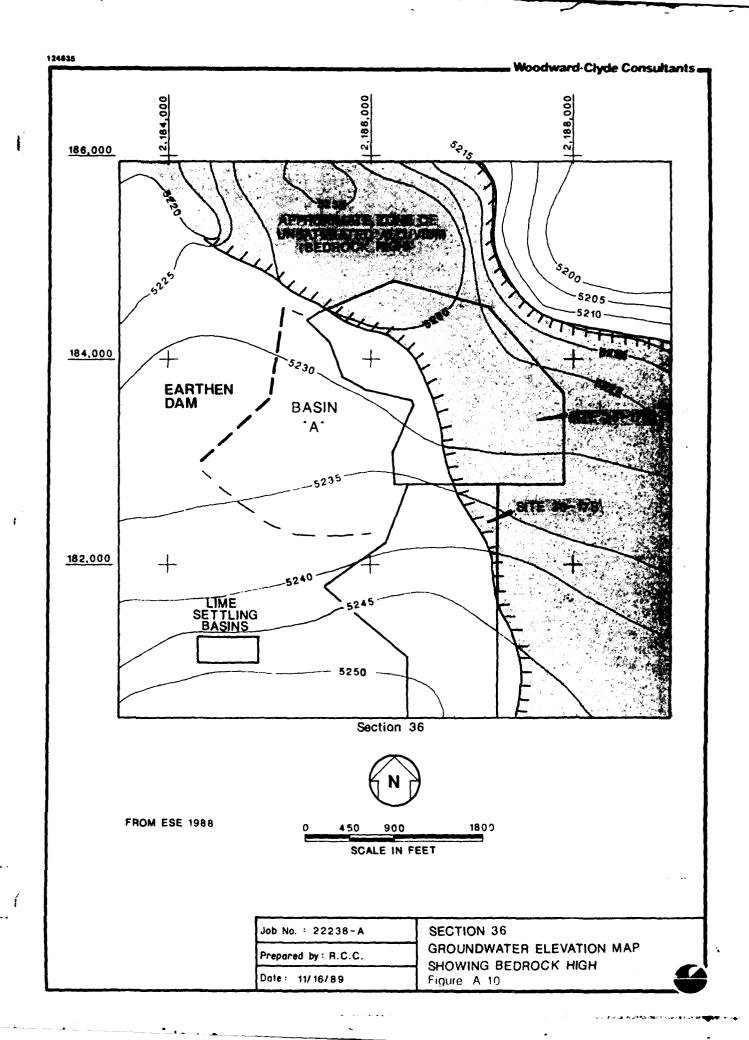
Well hydrographs for the past 6 years indicate that the water table elevation has been relatively steady but slightly declining in the study area. The hydrographs also indicate that recent seasonal water level fluctuations range from 2 to 3 feet and apparently now have a greater seasonal variation year to year for past comparable seasons.

The unconfined alluvial aquifer at RMA is composed of unconsolidated Quaternary deposits consisting of fine-to very fine-grained silty sand with occasional interbedded clayer silt overlying the upper weathered portion of the Denver Formation bedrock. Previous investigations indicated that there is a contrast in permeability between the alluvial and bedrock units of about two orders of magnitude. This is significant in evaluating the potential for contaminant migration. The CSAR estimates the hydraulic conductivity of the alluvial aquifer in this area to range from 2.4×10^{-3} to 6.0×10^{-3} cm/sec and the volcaniclastic unit to be about 5×10^{-5} cm/sec.

Alluvial groundwater flowing north through Section 36 encounters the bedrock ridge, which protrudes above the water table, and, due to the sharp contrast in hydraulic conductivities, is forced to turn and flow northwest out the Basin A neck. The Basin A neck is a relatively narrow paleochannel between Rattlesnake Hill in Section 35 and the prominent bedrock ridge that cuts across Section 36.

Because of the difference in hydraulic conductivity between the alluvial and bedrock materials and the reduced cross-sectional area in the Basin A neck, the groundwater forms an apparent mound in the Basin A area as evidenced by the relatively flat hydraulic gradient in the basin (refer to Figure A-10). The apparent mound, coupled with the lower surface elevation in the basin, results in the shallow depth to groundwater in the west central portion of Section 36.

The groundwater contour map shows a sharp increase in the hydraulic gradient northeast of the ridge. The gradient increases because water moving through the ridge is slowed by the two order of magnitude drop in



hydraulic conductivity of the unit. Before the water can continue moving through the ridge, the gradient must increase enough to offset the lower permeability. Water will eventually move through the Denver Formation ridge, but at a much slower rate than it travels in the alluvial unit.

A.4.5 Previous Investigations

Past studies at Site 36-17 were generally designed to characterize the physical setting, evaluate the nature and extent of contamination, and assess possible contaminant migration pathways. The investigations at Site 36-17 were conducted in two phases during which a variety of investigative techniques were employed including extensive use of geophysical surveys, borehole drilling and sampling, well construction and sampling, and trenching. During the previous investigations, 317 samples of soil, waste, and water were collected in Site 36-17. The Phase I and Phase II Contamination Assessment Reports and the Central Study Area Report present the findings of those investigations.

A.4.6 Nature and Extent of Contamination

The previous studies conducted to evaluate contamination in Site 36-17 concluded that past waste disposal resulted in widespread contamination in the area. The precise contaminant distribution trends are difficult to assess due to the varied disposal history and resulting heterogenous nature of the waste. However, Section 2.0 of the Remedial Investigation Report for the Central Study Area (CSAR) presents a detailed evaluation of the distribution of contamination in Site 36-17. Figures showing contaminant plumes in Site 36-17 groundwater are contained in Section 3.0 of the CSAR. See Figures 3.1-7, 3.1-8, 3.1-9, 3.1-10, 3.1-11, 3.1-14, and 3.1-15 of the CSAR for plumes including volatile hydrocarbons, volatile aromatics, organosulfur compounds (mustard related), organosulfur compounds (herbicide related), GB-agent related organophosphorous compounds, organochlorine pesticides, and arsenic, respectively. (Refer to that document if additional detail is desired.) A review of the reported findings of the previous investigations indicate that the following general conditions exist at Site 36-17:

- Contaminants found above indicator levels or detection limits in Site 36-17 soil and/or water samples include the ICP metals (cadmium, chromium, copper, lead, and zinc), arsenic, mercury, aldrin, dieldrin, fluoroacetic acid, chlordane, isodrin, dithiane, oxathiane, DIMP, IMPA, hexachlorocyclopentadiene, DDE, DDT, and DBCP.
- Several disposal trenches apparently intersect the shallow alluvial aquifer or became inundated when the water level rose in Basin A.

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- Contaminants have apparently leached from several trenches to a depth of at least 20 feet below ground surface.
- There is a general increase in the number of analyte detections and concentrations in groundwater downgradient of the Site 36-17 disposal trenches, however, most of the analyte detections appear to originate at the Shell trenches in 36-17S.
- The disposal trenches can be generally categorized by their relative groundwater contamination hazard and assigning relative risk based on the depth to groundwater as follows:
 - Trenches excavated in areas of topographic lows and potentiometric highs. These
 trenches may intersect the alluvial aquifer and, therefore, run the highest risk of
 contaminating the groundwater.
 - 2. Trenches excavated in areas of intermediate topographic and potentiometric elevations.

 The bottoms of these trenches are typically 5 to 15 feet above groundwater.
 - 3. Trenches excavated in areas of topographic highs and potentiometric lows. The bottoms of these trenches are typically more than 15 feet above groundwater. In some areas, the alluvial aquifer does not exist because of the topographic high in the bedrock surface.

These general conditions were important in evaluating which of the 46 previously confirmed disposal trenches represented the greatest risk of contaminating groundwater at Site 36-17. Generally, the trenches of highest risk containing the highest concentrations of contaminants were selected for further investigation under this program.

A.5 LIME SETTLING BASINS SITE GEOLOGY

There are two stratigraphic units of interest beneath the Lime Settling Basins: (1) the Quaternary Surficial deposits consisting of unconsolidated alluvial and erosion material, and (2) the Denver Formation. The alluvial material ranges from 15 feet to approximately 30 feet in thickness and consists of yellowish-brown, fine-grained, well-sorted, subangular silty sand.

The Denver Formation, to the maximum depth penetrated, consists of very stiff to hard, blocky, dusky brown claystone and silty claystone deposited in an ancient fluvial environment.

Before and during the deposition of the surficial material, an ancient stream system eroded the surface of the Denver Formation. As a result, the contact between the two stratigraphic units is highly irregular. Regionally, the bedrock surface of the Denver Formation slopes to the northwest. However, at the Lime Settling Basins, the bedrock surface slopes to the north-northeast.

The soil at the Lime Settling Basins is usually from the Ascalon-Vona-Truckton Association, which generally ranges from nearly level to steeply sloping, well-drained to excessively drained loamy and sandy soil. The soil typically becomes clay-rich and calcareous with depth. Alluvial thickness isopachs and the elevation of the top of the Denver Formation are included in Figures A-1 and A-3. Figure A-11 is a geologic cross-section of the Lime Settling Basins area.

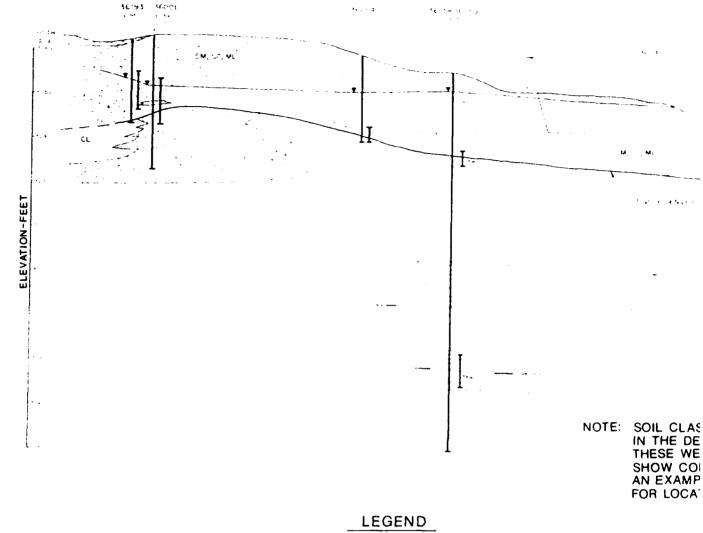
A.5.1 Lime Settling Basins Site Hydrology

The Lime Settling Basins are in a local topographic low in the southwest quadrant of Section 36. The elevation of standing water occurring in a portion of the Lime Settling Basins was measured in July 1989. Based on a measurement of 5,247 feet above mean sea level and water levels measured from surrounding wells, it appears the standing water corresponds with the local water table. Surface water currently drains from the Lime Settling Basins into Basin A as it was originally built to do. At one time, a drainage ditch also connected the Lime Settling Basins with Basin B in Section 36.

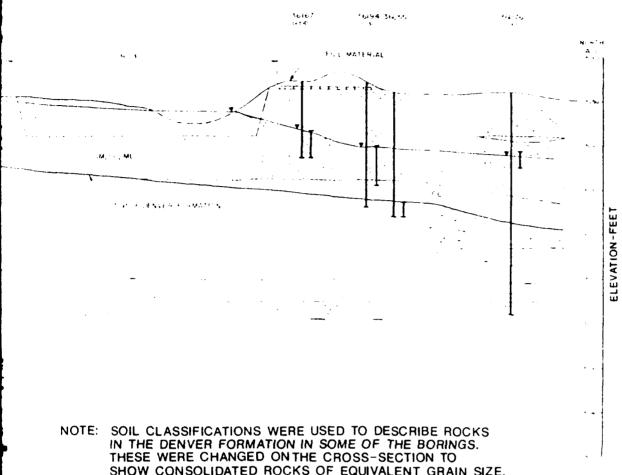
The Lime Settling Basins are situated hydrologically downgradient of the M-1 Settling Basins and the South Plants. While the regional direction of groundwater flow at the RMA is generally to the northwest, the groundwater flow in the Lime Settling Basins area is nearly due north, which is probably due to the influence of local bedrock paleotopographic influences and the groundwater mound that exists in the South Plants area.

The saturated alluvial material is from 5.4 to 18.4 feet thick at the Lime Settling Basins. Water levels measured in July 1989 for wells screened in the alluvial material ranged from 4 to 14.6 feet below ground level. Figure A-11 shows the potentiometric surface based on the July 1989 water measurements.

The Denver Formation is saturated within the site and may contain some local confined aquifers. The more hydraulically conductive units in the formation are expected to be subhorizontal sandstone or siltstone bodies adjacent to less conductive claystone. The direction of groundwater flow is expected to be generally the same as that of the alluvial groundwater.



ALLUVIUM	
BACKFILL MATERIAL	36193 WELL N
LIME RESIDUE	(-95') DISTAN(+(EAST -(WEST
SILTY SANDS, CLAYEY SANDS AND INORGANIC SILTS (SM, SC, ML)	GROUN!
INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, OCCASIONALLY SANDY AND/OR SILTY DENVER FORMATION	058 SCREEN CLUSTE
SANDSTONE, GREEN TO GRAY, FINE TO COARSE GRAINED	TOP OF
SILTSTONE, GRAY, OCCASIONALLY SANDY, HARD	
CLAYSTONE, SHALE, GRAY TO BLACK, SOFT TO HARD, OCCASIONALLY SANDY AND/OR SILTY	



IN THE DENVER FORMATION IN SOME OF THE BORINGS.
THESE WERE CHANGED ON THE CROSS-SECTION TO
SHOW CONSOLIDATED ROCKS OF EQUIVALENT GRAIN SIZE.
AN EXAMPLE WOULD BE CLAY TO CLAYSTONE OR SHALE.
FOR LOCATION OF CROSS-SECTION A1-A1. SEE FIGURE A-1

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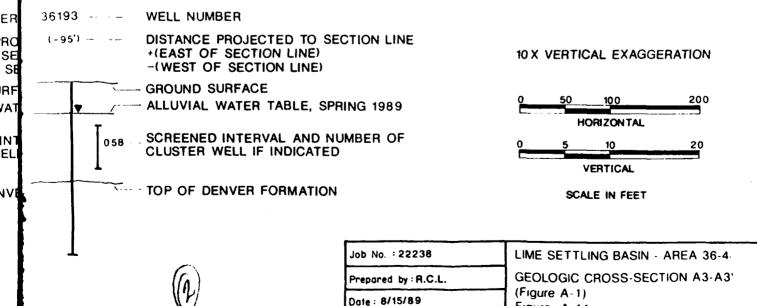


FIG.

Figure A-11

A.5.2 Previous Soils Investigations

The Lime Settling Basins (Site 36-4) was investigated by ESE in two phases. Phase I consisted of 10 borings ranging in depth from 3 to 11 feet yielding 27 soil samples. Results from chemical analyses indicate elevated concentrations of aldrin, chlordane, dieldrin, endrin, heptachlor, DDE, and DDT. Although samples contained less than 0.4 ppm lead, other metals, including zinc, copper, and arsenic occurred at elevated levels.

All samples from Phase I were analyzed by gas chromatography/mass spectrometry (GC/MS) for semivolatile organic compounds and by inductively coupled argon plasma (ICP) analyses for cadmium, chromium, copper, lead, and zinc. Analyses for mercury and arsenic were conducted using atomic absorption (AA) spectroscopy, and for dibromochloropropane using gas chromatography (GC). Volatile organic analyses by GC/MS were performed on all samples more than 1 foot in depth.

The Phase II program was initiated in the summer of 1987 by ESE. It included the expansion of the study area boundaries to include data from sites around the original study area that Phase I results indicated were contaminated. Areas that were not studied in Phase I were included in Phase II. A geophysical survey was performed along the expanded western boundary of the site to locate buried metal objects. Eighteen soil borings were completed in Phase II, ranging in depth from approximately 3 to 10 feet. The 18 borings yielded 47 soil samples from various depths.

Phase II samples were analyzed for arsenic, mercury, ICP metals, organochlorine pesticides, organosulphur compounds, dibromochloropropane, dicyclopentadiene, volatile halocarbon compounds, and volatile aromatic compounds since Phase I samples were found to contain these compounds. Seven samples were analyzed for Army agent degradation products (ADP) since this method was not available in Phase I.

A.5.3 Previous Groundwater Investigations

Since 1983, groundwater samples from three wells in the Lime Settling Basins area have been analyzed for contaminants. These wells are No. 36001 (upgradient), No. 36076 (downgradient), and No. 36058. Contaminants analyzed include volatile organics, aromatic compounds, organochlorine pesticides (OCPs), DIMP, DMMP, and ICP metals. Arsenic analysis was not performed.

A.5.4 Nature and Extent of Soils Contamination

Contaminants expected at the site include raw materials, manufacturing by-products, and numerous degradation products associated with the synthesis of mustard, lewisite, and pesticides in the South Plants area.

The findings of the previous studies are consistent with the history of the area. Of the 16 borings completed and sampled by ESE, each contained detectable concentrations of one or more OCPs, including aldrin, dieldrin, endrin, and isodrin. Elevated concentrations of dieldrin were detected in 12 of 22 samples at concentrations ranging from 0.6 to 70 μ g/g. Aldrin was detected in 9 samples at concentrations up to 600 μ g/g. Endrin and isodrin were detected at levels up to 200 μ g/g and 300 μ g/g, respectively.

Organosulphur compounds, chlorophenylmethyl sulfide (CPMS), chlorophenylmethyl sulfoxide (CPMSO), and chlorophenylmethyl sulfone (CPMSO2) were detected in four borings at concentrations up to $50 \mu g/g$. DCPD and DDE were detected in two borings, and DBCP was detected in three borings. DDT was found in one boring at $7 \mu g/g$ in the 0- to 1-foot depth interval.

Volatile organic compounds (VOC) were detected in five samples collected from the deepest intervals of five borings. Chloroform occurred in four of the five borings at concentrations ranging from 2 to $7 \mu g/g$. Concentrations of methylene chloride were detected in two borings at concentrations of 2 and 0.9 $\mu g/g$. Benzene concentrations ranging from 5 to $6 \mu g/g$ were found in two borings. Chlorobenzene was also detected at $2 \mu g/g$.

Arsenic and mercury were the most prevalent metals found in samples from the site. Mercury was found at elevated concentrations in 13 samples and was detected in a total of 17 samples. Arsenic was detected in 16 samples at concentrations up to 370 μ g/g. Four samples contained elevated copper; lead exceeded its indicator range in two samples; and zinc exceeded its indicator range in three samples. Six samples contained cadmium; three in excess of the indicator range. Chromium was found within its indicator range in one sample.

DCPD was detected at a concentration of 7.1 µg/g in the 2- to 3-foot interval of Boring No. 3421 in the central area. DBCP and volatile and aromatic (VAO) compounds were not detected in the central region. Tetrachloroethene was detected at a concentration of 0.25 µg/g in Boring No. 3422. ADP compounds were detected in the central region of Site 36-4 in Boring Nos. 3421, 3422, and 3732.

Nontarget compounds were also detected in Phase II soils. Compounds detected were polycyclic aromatic hydrocarbons (PAH), including anthracene, pyrene, and fluoranthene at concentrations from 20 to 100 µg/g.

Also detected were bicycloheptadiene, hexachlorobutadiene, trichlorobenzenamine, and methylsulfonyldinitro-n, n-dipropyl-benzenamine, which was detected at 200 µg/g.

A.5.5 Nature and Extent of Groundwater Contamination

Three wells located in the Lime Settling Basins that were sampled since 1983 revealed the presence of contaminants, including VOCs, aromatics, OCPs, metals, and others. Of the VOCs, trichloroethylene, tetrachloroethylene, chloroform, and DBCP were all detected in both upgradient and downgradient wells at elevated concentrations.

Aromatics detected in both upgradient and downgradient wells include benzene, toluene, xylene, chlorobenzene, and dichlorobenzene. Trichlorobenzene and tetrachlorobenzene were also detected in water from wells in the area but were not specific to a particular well.

Aldrin was detected in upgradient and downgradient wells in the area. Dieldrin, endrin, and isodrin were all detected in downgradient wells.

Metals detected in water from wells in the area include arsenic (downgradient), mercury (upgradient), and chromium (upgradient). Copper was detected in both upgradient and downgradient wells. Other compounds detected in water from wells in the Lime Settling Basins area include chlorophenylmethyl sulfane, dimethyl sulfide, DIMP, DMMP, and dithiane.

A.6 MOTOR POOL AREA SITE GEOLOGY

The Motor Pool Area is in Section 4 on the Western edge of the RMA. There are two stratigraphic units of interest beneath the Motor Pool Area: (1) the Quaternary Alluvium, and (2) the Denver Formation. The alluvial material consists of discontinuous lenses of sand and gravel, interbedded with silt and clay. Gravels and gravely sands are common at the base of the alluvial section, especially in paleochannels. The alluvial material ranges from about 70 feet to about 100 feet in thickness. The thickest alluvium occurs over bedrock lows and the thinnest over bedrock highs.

The alluvial-bedrock contact is highly irregular due to the extensive erosion by ancient streams. Generally, the bedrock surface slopes to the northwest in the Motor Pool Area; however, where the bedrock surface has been incised by an ancient stream channel, the slope becomes perpendicular to the trend of the paleochannel. A

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northwest trending paleochannel cuts across the northern boundary of the Motor Pool Area and has approximately 70 feet of relief.

The Denver Formation in the Motor Pool Area is predominantly composed of claystone with interbedded sandstone, siltstone, and lignite layers from 2 to approximately 20 feet thick. Layers of volcaniclastic material are also present.

A.6.1 Motor Pool Area Site Hydrology

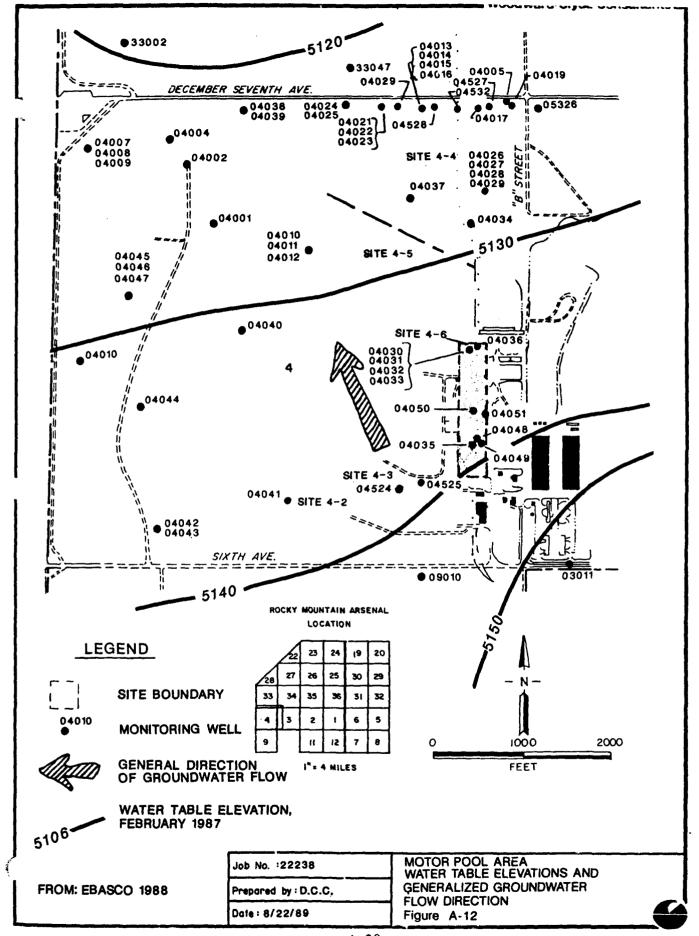
Site 4-6 is situated in the Irondale Gulch drainage basin. It has an average elevation of 5,200 feet above mean sea level (msl) and a local relief of 5 feet. In the northern portion of the area, surface water drains north and is controlled by railroad embankments and drainage ditches. The surface water from the southern portion of the area drains west into a drainage ditch and then continues northwest into a local topographic depression.

Groundwater within the alluvium is approximately 60 feet below the ground surface and it flows to the northwest and north-northwest. The February 1987 water table and groundwater flow direction, as determined by Ebasco Services (1988), is shown in Figure A-12.

The Denver Formation is saturated within the site and may contain some local confined aquifers. The more hydraulically conductive units in the formation are expected to be subhorizontal sandstone or siltstone bodies adjacent to less conductive claystone. The direction of groundwater flow is expected to be generally the same as that of the alluvial groundwater.

A.6.2 Previous Investigations

Previous studies done in the Motor Pool Area include: a May 1984 RCRA audit done by the Colorado Department of Health in the area outside the roundhouse; a 1986 study to identify possible trichloroethylene sources in the Motor Pool Area; and a soil gas study conducted in February 1986 to aid in defining trichloroethylene plumes in the groundwater. The most recent studies include a Contamination Assessment Report, and Western Study Area Remedial Investigation (Ebasco 1989). The following sections describe the intrusive investigation focused on the reported TCE plume in the Motor Pool Area.



A.6.3 Soils

Site 4-6 was investigated by Ebasco under Task 38. Field work began in the spring of 1986. Ebasco's Task 38 Technical Plan (Ebasco 1987b) called for 25 borings to be drilled to depths of from 1 to 90 feet. A total of 125 soil samples were to be taken from these borings. Two additional borings were proposed in a letter technical plan (Ebasco 1987a). The sampling program was augmented to include a total of 166 samples from 36 borings and 1 soil grab sample that was taken from the drainage ditch west of Building 627 on the eastern side of the railroad tracks.

All but two samples were analyzed by gas chromatography/mass spectrometry (GC/MS) for volatile organics (except the 0- to 1-foot interval) and semivolatile organics. All but four samples were analyzed by inductively coupled argon plasma (ICP) screen for metals. The same samples were analyzed separately for arsenic and mercury. Several samples were analyzed for dibromochloropropane.

A.6.4 Water

Three water samples were taken by Ebasco in Site 4-6. The first was taken during the drilling of a 1-foot boring in the sump within the roundhouse in June 1986. The water that was sampled had seeped into the borehole through cracks in the concrete sump. The two remaining samples were taken from a 3-foot by 4-foot cavity that was suspected to be a collapsed septic tank located approximately 15 feet north of the roundhouse (Ebasco 1988).

A.6.5 Soil Ga

Several soil gas studies were conducted in the area during February 1986 by Ebasco to evaluate the concentration of trichloroethylene (TCE) in the Motor Pool Area soil. The soil gas survey sampled locations along several transect lines staked across the area. Line spacing ranged from about 250 to 750 feet, and the distance between sample locations ranged between 100 to 250 feet. A detailed description of the soil gas survey is contained in Ebasco 1987c.

A.6.6 Nature and Extent of Soils Contamination

Contaminants found in soils at the Motor Pool Area within or above their indicator levels include ethylbenzene, tetrachloroethylene, trichloroethylene, m-xylene, toluene, methylene chloride, dibromochloropropane, aldrin, cadmium, chromium, copper, lead, zinc, arsenic, and mercury (Ebasco 1988).

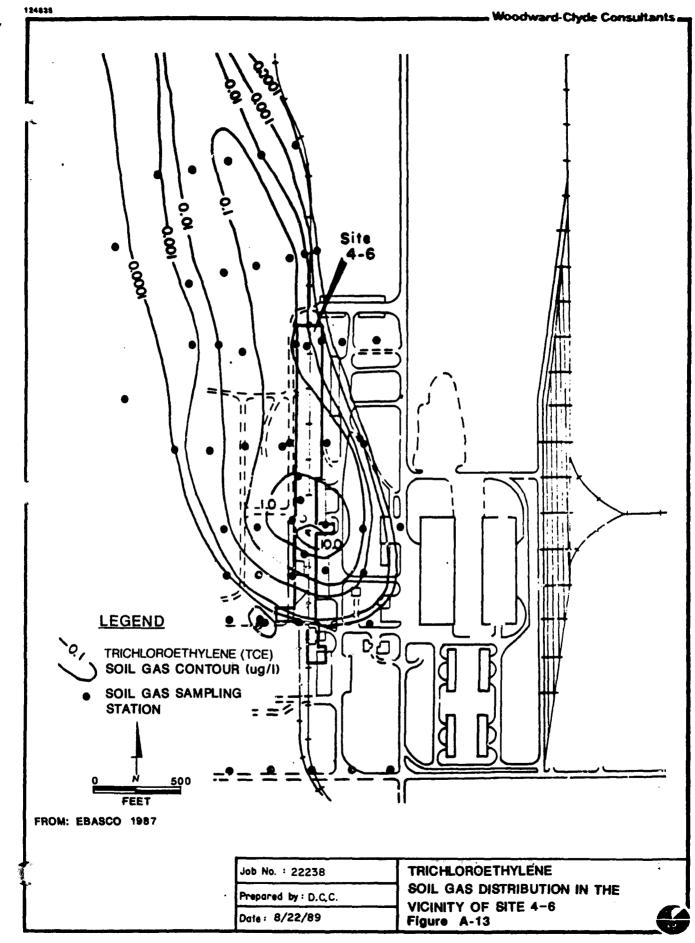
A-31

A.6.7 Nature and Extent of Water Contamination

Samples of alluvial water were collected and analyzed by Ebasco in 1986 and 1987. Analytes found within or above their indicator ranges (in this case, their detection limits) include 1,1-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane benzene, chloroform, trans-1,2-dichloroethylene, and trichloroethylene. The spatial distribution of the wells with detected contaminants indicate that some of these contaminants could originate at a source somewhere in the Motor Pool Area; however, a larger off-post source is also indicated.

A.6.8 Nature and Extent of Soil Gas Contamination

The data collected during the soil gas survey indicate trichloroethylene contamination of soil in the area north of Building 631; however, the information was not sufficient to identify a specific source. The concentrations detected in soil gas could not be confirmed by analysis of soil samples due to the higher certified method detection limit of the soil sample analysis. Figure A-13 shows the distribution of trichloroethylene indicated by the soil gas survey. Additional detail concerning the soil gas data is contained in a report by Ebasco (Ebasco 1987c).



APPENDIX B HEALTH AND SAFETY/PERSONNEL AIR SAMPLING

THE TOTAL STREET STREET

Page 1

Sampling Site: Section 36 Suspect Asbestos

Sample Collected by: Eric Masamori Sample Analysis by: DataChem

> Date of Collection: 22 May 1989 Date of Analysis: 23 and 31 May 1989

	Synthetic	Fibers	•	•	•	•	•	•		:		•	2	•	2	•	•		•	2	•	2
	Mineral	Wool	•	•	•	•	•	•	•	•	•	•	90-<100%	•	90-<100%		•	•		70-<80%	•	90-<100%
		Fiberglass																				2
		Cellulose		•	:	•	•	•	•	•	:	•	2	•	~ 1 %	•	•	•	•	2	•	윤
	Anthophyllite	Asbestos	2	2	2	2	2	2	2	2	2	윤	2	운	2	2	2	2	2	2	2	2
Actinolite/	Tremolite	Asbestos	2	2	2	2	2	2	욷	욷	2	2	2	2	2	2	2	2	운	2	2	2
	Crocidolite	Asbestos	2	2	2	2	2	2	2	욷	2	문	2	2	2	2	2	2	2	2	2	2
	Chrysotile	Asbestos	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Amosite	Asbestos	70-<80%	70-<80%	70-<80%	70-<80%	70-<80%	70-<80%	70-<80%	70-<80%	70-<80%	70-<80%	2	2	2	2	2	2	2	2	2	2
	Sample	Type	Bulk	Bulk	Bulk	Buk	Bulk	Bulk	Bulk	Bulk	8 5 7	Bulk	Bulk	Bulk	Bufk	Bulk	Bulk	Buk	Bulk	Buík	Bulk	Bulk
Field	Sample	Number	5/22/01	5/22/02	5/22/03	5/22/04	5/22/05	5/22/06	5/22/07	5/22/08	5/22/09	5/22/10	5/22/11	5/22/12	5/22/13	5/22/14	5/22/15	5/22/16	5/22/17	5/22/18	5/22/19	5/22/20

Sampling Site: 36-054

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 13 June 1989 Date of Analysis: 15, 16, 19 and 21 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA OSHAPEL mg/m3 mg/m3	OSHAPEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	AS-129	Filter	2	129	252	•	•	0.01	0.2
Arsine	AS-123 AS-124	ಕಕ	22	76	7.8	• •	• •	0.2	0.02
Aldrin	AS-126 AS-127	Filter	9	76	115 62	•	:	0.25	0.003
Dieldrin	AS-126 AS-127	Filler	22	76	115 62	•	1	0.25	900.0
Dicyclopentadiene	AS-126 AS-127	Filter	22	76	115 62	•	:	30	0.2
Hexachlorocyclopentadiene	AS-131F Filter AS-131T Tube	Filter Tube	22	125 125	12.8 12.8	1 + 2 + 1 +	• •	0.1.	0.003
bead	AS-133	Filter	Q	129	256	•	:	0.05	es 1
Total Dust	:	Filter	•	•	•	:	•	15	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

*ACGIH time-weighted average

Page 1

Sample Collected by: Daniel Burgess	Sample Analysis by: DataChem
l Blank	
Field	
Site: 36-054: Field	
Site:	
Sampling	

1

Date of Collection: 13 June 1989 Date of Analysis: 15, 16, 19 and 21 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHA PEL mg/m3	8-hr TWA OSHAPEL Limit of mg/m3 mg/m3 Detection (ug)
Arsenic Trioxide	AS-130	Filter	9	f •	6 6	•	:	0.01	0.2
Arsine	AS-125	ъ	2	•		•	•	0.2	0.02
Aldrin	AS-128	Filter	2	:	•	:	•	0.25	0.003
Dieldrin	AS-128	Filter	2	•	•	•	•	0.25	900.0
Dicyclopentadiene	AS-128	Filter	2		•	•	•	30	0.5
Hexachiorocyclopentadiene	AS-132F BAS-132T	Filter Tube	<u> </u>	: :	• •	1 · ·	: :	0.1	0.003
Fead	AS-134	Filter	2	:		•	•	0.05	ო
Total Dust	:	Filter	•	•	0 0 0	•	•	15	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

Sage 1

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem Sampling Site: 36-187

Date of Collection: 5 May 1989 Date of Analysis: 10, 15, and 17 May

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3		OSHAPEL Limit of mg/m3 Detection (ug)
Arsenic Trioxide	AS-008	Filter	2	230	469	•	•	0.01	0.2
Arsine	AS-011 AS-013	ರರ	22	5 5 0	6.52	• •	• •	0.5	0.02
Aldrin	AS-010	Filter	2	113	232	•	4 4 9	0.25	0.003
Dieldrin	AS-010	Filter	9	113	232	•	•	0.25	9000
Dicyclopentadiene	•	Filter	:	•	•	•	•	30	0.2
Hexachlorocyclopentadiene	AS-012 AS-014	Filter Tube Tube	22		5.79 4.8			0.1	0.003
read	AS-009	Filter	2	230	469	•	•	0.05	က
Total Dust	•	Filter	•	•	:	•	•	15	0.01

Equivalent exposure for mixture of compounds - ND

ND = Parameter not detected

Page 1

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 3 May 1989 Date of Analysis: 10 and 17 May 1989

Sampling Site: 36-188

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	8-hr TWA OSHAPEL Limit of mg/m3 Detection (ug)
Arsenic Trioxide	AS-005	Filter	2	223	449.1	•	:	0.01	0.2
Arsine	AS-003	ಶ	2	223	23.3	•	•	0.2	0.02
Aldrin	•	Filter	•	:	•	•	•	0.25	0.003
Dieldrin	AS-007	Filter	2	230	471.5	:	:	0.25	900.0
Dicyclopentadiene	:	Filler	•	:	6 4	:		30	0.2
Hexachlorocyclopentadiene	AS-004	Filter	: 2	223	11.08	• •	• •	0.1	0.003
peer	AS-006	Filter	9	230	468	•	•	0.05	e
Total Dust	•	Filter	:	•	•	•	•	55	0.01

Equivalent exposure for mixture of compounds = ND

ND - Parameter not detected

Sampling Site: 36-191

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 10 May 1989 Date of Analysis: 15, 16, 17 May and 5 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	8-hr TWA OSHAPEL Limit of mg/m3 mg/m3 Detection (ug)
Arsenic Trioxide	AS-033	Filter	2	95	186.5	•	•	0.01	0.2
Arsine	AS-028	ฮ	2	9 2	10.64	•	•	0.5	0.02
Aldrin	AS-030	Filter	2	9.2	144	,	•	0.25	0.003
Dieldrin	AS-030	Filter	2	95	144	•	•	0.25	900.0
Dicyclopentadiene	AS-030	Filter	2	95	144	:		30	0.2
Hexachlorocyclopentadiene	AS-029F AS-029T	Filter Tube	22	9 9 9	8.835 8.835	: :	• •	0.1	0.003
pean	AS-032	Filter	2	9 2	191.4	•	•	0.05	က
Total Dust	AS-031 AS-034	Filter	0.01 mg 0.02 mg	6 9 6 6	49 111.6	0.204	0.012	5	0.01

Equivalent exposure for mixture of compounds = 0.0255

ND - Parameter not detected

*ACGIH time-weighted average

Sampling Site: 36-191: Field Blank

\$ 5 Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 10 May 1989
Date of Analysis: 15, 16, 17 May and 5 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3		OSHA PEL mg/m3	8-hr TWA OSHAPEL Limit of mg/m3 mg/m3 Detection (ug)
Arsenic Trioxide	AS-038	Filter	<u>Q</u>	•	•	•	•	0.01	0.2
Arsine	AS-037	ь	S	•	•	•	:	0.2	0.02
Aldrin	AS-040	Filter	Q N	•	:	•	•	0.25	0.003
Dieldrin	AS-040	Filter	2	•	•	:	•	0.25	9000
Dicyclopentadiene	AS-040	Filter	Q	•	•	•	•	30	0.2
Hexachlorocyclopentadiene	AS-035F Filter AS-035T Tube	Filter Tube	22	: :	: :	• •	: :	0.1	0.003
Lead	AS-036	Filter	2	•	4 6 1	:	:	0.05	ဗ
Total Dust	AS-039	Filter	0.01	:	•	•	•	15	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

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Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Sampling Site: 36-192

Date of Collection: 18 May 1989 Date of Analysis: 19, 23 and 26 May 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHA PEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	AS-071	Filter	2	197	402	:	:	0.01	0.2
Arsine	AS-062 AS-063 AS-068	ಕಕಕ	2 2 2	5 4 7 0 0	5.9 4.8 9.19		: : :	0.2	0.02
Aldrin	AS-066 AS-069	Filter	22	107 88	161 133	• •	4 4	0.25	0.003
Dieldrin	AS-066 AS-069	Filter	22	107 88	161 133	: :	• •	0.25	900.0
Dicyclopentadiene	AS-066 AS-069	Filter	99	107 88	161	: :	::::	30	0.2
Hexachlorocyclopentadiene	AS-064 AS-065	Filter Filter Tube	99	58 137	6 14.1		t t t	0.1.	0.003
Lead	AS-070	Filter	2	197	399	:	•	0.05	က
Total Dust	AS-060 AS-061 AS-067	######################################	0.00 mg 0.00 mg 0.03 mg	67 57 71	117.5 99.9 124	0.00	0.00 0.00 0.036	<u>.</u>	0.01

Equivalent exposure for mixture of compounds = 0.0161

ND = Parameter not detected

Page 1

Sample Collected by: Daniel Burgess	Sample Analysis by: DataChem
Blank	
Field	
Site: 36-192: Field Blank	
Site:	
Sampling	

Date of Collection: 18 May 1989 Date of Analysis: 19, 23 and 26 May 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	AS-074	Filter	Q	•	•	•	•	0.01	0.2
Arsine	AS-073	ь	Q	:			•	0.2	0.02
Aldrin	AS-076	Filter	Q	:	•	•	:	0.25	0.003
Dieldrin	AS-076	Filter	2	•	•	e :	•	0.25	900.0
Dicyclopentadiene	AS-076	Filter	2	•	•	•	:	30	0.2
Hexachlorocyclopentadiene	AS-072	Filter Tube	2 :		• •	: :	• •	0.1.	0.003
pea	AS-077	Filter	2	•	•	•	•	0.05	ю
Total Dust	AS-075	Filter	0.01	•	•	•	•	ر د	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

Sampling Site: 36-193

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 16 May 1989 Date of Analysis: 17, 18 23 and 26 May 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA OSHAPEL mg/m3 mg/m3	OSHAPEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	AS-050	Filter	Q N	156	315	•	•	0.01	0.2
Arsine	AS-048 AS-053	៦៦	22	89 67	9.9		• •	0.2	0.02
Aldrin	AS-047	Filter	2	115	174	* *	:	0.25	0.003
Dieldrin	AS-047	Filter	2	115	174	•	•	0.25	0.006
Dicyclopentadiene	AS-047	Filter	2	115	174	•	•	30	0.2
Hexachlorocyclopentadiene	AS-052	Filter Tube	2 :	156	14.9	4 # 4 # 1 *	• •	0.1.	0.003
. peal	AS-051	Filter	2	156	313	1	:	0.05	က
Total Dust	AS-046 AS-049	Filter	0.02 mg 0.00 mg	7.2 6.9	128 123	0.156	0.023	5	0.01

Equivalent exposure for mixture of compounds = 0.0104

ND - Parameter not detected

*ACGIH time-weighted average

Sampling Site: 36-193: Field Blank

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 16 May 1989 Date of Analysis: 17, 18, 23 and 26 May 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHA PEL mg/m3	8-hr TWA OSHAPEL Limit of mg/m3 mg/m3 Detection (ല്വ
Arsenic Trioxide	AS-058	Filter	2	•	•	•	f 1	0.01	0.2
Arsine	AS-054	ರ	2	•	•	•	f 1	0.2	0.02
Aldrin	AS-059	Filter	Q Z	:	•	1	•	0.25	0.003
Dieldrin	AS-059	Filter	2	4 *	•	•	:	0.25	9000
Dicyclopentadiene	AS-059	Filter	Ð	•	•	•	<i>t</i> 1	30	0.2
Hexachlorocyclopentadiene	AS-055	Filter Tube	₽ ;	: :	: :			0.1	0.003
Lead	AS-057	Filter	2	•	•	•		0.05	ო
Total Dust	AS-056	Filter	00.0	:	:	•	:	15	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

^{*}ACGIH time-weighted average

Sampling Site: 36-193

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

> Date of Collection: 7 June 1989 Date of Analysis: 12, 14, 15 and 19 June 1989

ONDONO	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	8-hr TWA OSHAPEL Limit of mg/m3 Detection (ug)
Arsenic Trioxide	AS-118	Filler	Q	166	323	•	•	0.01	0.5
Arsine	AS-114 AS-115	ಕಕ	<u>Q</u> Q	9175	9.4	: :	1 1 1 1	0.5	0.02
Aldrin	AS-116	Filter	Q	115	176	•	•	0.25	0.003
Dieldrin	AS-116	Filler	<u>Q</u>	115	176	•	•	0.25	0.006
Dicyclopentadiene	AS-116	Filter	2	115	176	:	•	30	0.5
Hexachlorocyclopentadiene		Filter Tube		::	: :	: :	: :	0.1	0.003
Lead	AS-117	Filter	Q	166	330	•	e 4 1	0.05	ю
Total Dust	•	Filter	•	1	:	•		1	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

*ACGIH time-weighted average

Page 1

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Field
36-193:
Site:
Sampling

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 7 June 1989
Date of Analysis: 12, 14, 15 and 19 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHA PEL mg/m3	8-hr TWA OSHAPEL Limit of mg/m3 mg/m3 Detection (ug)
Arsenic Trioxide	AS-122	Filter	2	•	•	:	•	0.01	0.2
Arsine	AS-119	ь	2	•	•	:	•	0.2	0.02
Aldrin	AS-120	Filter	2	;	•	:	•	0.25	0.003
Dieldrin	AS-120	Filter	Ş	<i>:</i>	•	•	•	0.25	900.0
Dicyclopentadiene	AS-120	Filter	2	•	•	•	•	30	0.2
Hexachlorocyclopentadiene	: :	Filter Tube			• •	: :		0.1	0.003
Lead	AS-121	Filter	2	:	•	•	•	0.05	ო
Total Dust	:	Filter	:	•	:	•	:	15	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

*ACGIH time-weighted average

Sampling Site: 36-194

.

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

> Date of Collection: 16 June 1989 Date of Analysis: 20 and 21 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHA PEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	AS-141	Filter	9	130	255	:	:	0.01	0.2
Arsine	AS-137 AS-138	ಕಕ	22	85 0 85	4.1 8.8	: :	• •	0.2	0.02
Aldrin	AS-139	Filter	2	115	177	:	:	0.25	0.003
Dieldrin	AS-139	Filter	2	115	177	:	:	0.25	900.0
Dicyclopentadiene	:	Filter	•	•	•	•	:	30	0.5
Hexachlorocyclopentadiene		Filter Tube	: :	• •	: :	: :		0.1	0.003
Lead	AS-140	Filter	2	130	260	:	:	0.05	က
Total Dust	AS-135 AS-136	Filter	-0.02	55 75	96 131	-0.208	-0.024	2	0.01

Equivalent exposure for mixture of compounds = -0.0139

ND = Parameter not detected

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Sampling Site: 36-194: Field Blank

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 16 June 1989 Date of Analysis: 20 and 21 June 1989

	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	Limit of Detection (ug)
	AS-146	Filter	2	•	•	•	•	0.01	0.2
Arsenic Irloxide	AS-143	<u>ნ</u>	9	•	:			0.2	0.02
oi: F	AS-144	Filter	2	•	:	•	•	0.25	0.003
	AS-144	Filter	2	•	•	•	:	0.25	900.0
		т 	•	:	•	•	•	30	0.2
Dicyclopentadiene Hexachlorocyclopentadiene		Filter	:	• •				0.1	0.003
	AS-145	Tube Filter	<u>.</u> 5			:	•	0.05	က
Total Dust	AS-142	1111	-0.01	•	•	•	•	15	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

ACGIH time-weighted average

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Sampling Site: Well 01083

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

> Date of Collection: 12 may 1989 Date of Analysis: 15, 16, 17 May and 5 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	OSHAPEL Limit of mg/m3 Detection (ug)
Arsenic Trioxide	•	Filter	•	•	•	•	•	0.01	0.2
Arsine	AS-043	ರ	0.05	95	10.7	0.005	0.0009	0.2	0.02
Aldrin	AS-042	Filter	2	111	172	•	•	0.25	0.003
Dieldrin	AS-042	Filter	2	111	172	•	:	0.25	900.0
Dicyclopentadiene	AS-042	Filter	2	111	172	•	•	30	0.2
Hexachlorocyclopentadiene	AS-044F Filter AS-044T Tube	Filter Tube	22	9 9 5 8	တတ	: :		0.1	0.003
. pear	AS-041	Filter	Q	115	235	•	•	0.05	ო
Total Dust	AS-045	Filter	0.02 mg	7.0	130	0.154	0.024	15	0.01

Equivalent exposure for mixture of compounds = 0.0353

ND = Parameter not detected

*ACGIH time-weighted average

Pane 1

Sampling Site: M-01503

Sample Collected by: Danie! Burgess .Sample Analysis by: DataChem

Date of Collection: 1 June 1989 Date of Analysis: 5, 6, 7 and 14 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA OSHAPEL mg/m3 mg/m3	OSHAPEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	AS-105	Filter	2	155	307	•	:	0.01	0.2
Arsine	AS-102 AS-112	ಕಕ	2 2	8 8 0 8	8 8 6 6			0.2	0.05
Aldrin	AS-103 AS-113	Filter Filter	22	0 8 8 0	122 122	: :	• •	0.25	0.003
Dieldrin	AS-103 AS-113	Fiiter Fiiter	0.0032 ND	80 0 80	122 122	0.026	0.004	0.25	90000
Dicyclopentadiene	AS-103 AS-113	Filter	22	80	122	•	•	30	0.2
Hexachlorocyclopentadiene	AS-104F AS-104T	Filter Tube	22	155 155	306 306	• •		0.1	0.003
beat	AS-106	Filter	2	155	306	•	•	0.05	က
Total Dust	:	Filter	:	•		•	:	.	0.01

Equivalent exposure for mixture of compounds = 0.104

ND = Parameter not detected

*ACGIH time-weighted average

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Page 1

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem Sampling Site: M-01503: Field Blank

Date of Collection: 1 June 1989 Date of Analysis: 5, 6, 7 and 14 June 1989

	Field Sample	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	Limit of Detection (ug)
		Filter	2	:	•	•	•	0.01	0.2
Arsine	AS-107	ნ	2	•	:	4 4	•	0.5	0.05
o de la companya de l		Filter	Q	•	•	•	•	0.25	0.003
ייי די		Filter	2	:	•	:	•	0.25	9000
	A C F C A	Filler	2	•	•	:	•	30	0.2
Dicyclopentaglene			<u> </u>		•	•	•	0.1.	0.003
Hexachlorocyclopentadiene	AS-109F AS-109T	Filter Tube	22	: • • •	• •	•	:		
Lead	AS-111	Filter	2	•	•	•	•	0.05	က
Total Dust	1	Filter	•	,	:	•	:	5	0.01

Equivalent exposure for mixture of compounds = ND

ND - Parameter not detected

Sampling Site: Boring 001, M-1 Pond

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 24 May 1989
Date of Analysis: 25, 27, 28, 31 May and 5 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	Found '8-hr TWA OSHAPEL Limit of ng/m3 mg/m3 mg/m3 betection (u	OSHAPEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	AS-093	Filter	Q	95	191	:	•	0.01	0.2
Arsine	AS-092	ь	2	86	9.02	:	•	0.2	0.02
Aldrin	AS-095	Filter	2	8 6	132.5	•	•	0.25	0.003
Dieldrin	AS-095	Filter	2	8 6	132.5	•	•	0.25	900.0
Dicyclopentadiene	AS-095	Filter	2	86	132.5		:	30	0.2
Hexachlorocyclopentadiene	AS-091F Filte AS-091T Tube	Filter Tube	22	8 8	8.77	: :	: :	0.1	0.003
Lead	AS-094	Filter	2	9 2	191	•	•	0.05	က
Total Dust	AS-090	Filter	0.02 mg	7.0	124.5	0.161	0.023	15	0.01

Equivalent exposure for mixture of compounds = 0.0107

ND = Parameter not detected

Page 1

Sampling Site: Boring 001, M-1 Pond: Field Blank

**

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

> Date of Collection: 24 May 1989 Date of Analysis: 25, 27, 28, 31 May and 5 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHA PEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	AS-099	Filter	9	•	•	:	:	0.01	0.2
Arsine	AS-098	ь	2	•	•	•	•	0.2	0.02
Aldrin	AS-101	Filter	9	•	•	•	•	0.25	0.003
Dieldrin	AS-101	Filter	9	•	•	•	•	0.25	900.0
Dicyclopentadiene	AS-101	Filter	9	:	•	•	•	30	0.2
Hexachlorocyclopentadiene	AS-097F Filte AS-097T Tube	Filter Tube	22	: :	• •	• •		0.1	0.003
Lead	AS-100	Filter	9	:	•	•	•	0.05	ო
Total Dust	AS-096	Filter	-0.01	:	•	•	•	15	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

Sampling Site: BORING 007, M-1 POND

•

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 22 May 1989
Date of Analysis: 23, 24, 27, 28 May and 2 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3		OSHAPEL Limit of mg/m3 Detection (ug)
Arsenic Trioxide	AS-078	Filter	0.1	7.8	160	0.0006	0.0001	0.01	0.2
Arsine	AS-082	ь	2	7.8	8.034	•		0.2	0.02
Aldrin	AS-080	Filter	2	7.8	117.1	•	6 1	0.25	0.003
Dieldrin	AS-080	Filter	2	7.8	17.1	•	1	0.25	900.0
Dicyclopentadiene	AS-080	Filter	9	7.8	117.1	:		30	0.2
Hexachlorocyclopentadiene	AS-083F AS-083T	Filter	22	. 78	8.034 8.034	• •	• •	0.1.	0.003
Lead	AS-079	Filter	Ş	7.8	159.1	•	•	0.05	က
Total Dust	AS-081	Filter	0.03 mg	69	121.8	0.246	0.035	5	0.01

Equivalent exposure for mixture of compounds = 0.0764

ND = Parameter not detected

*ACGIH time-weighted average

Page 1

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem Sampling Site: BORING 007, M-1 Pond: Field Blank

Date of Collection: 22 May 1989 Date of Analysis: 23, 24, 27, 28 May and 2 June 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	8-hr TWA OSHAPEL Limit of mg/m3 Detection (ug)
Arsenic Trioxide	AS-084	Filter	Š	•	•	•	•	0.01	0.5
Arsine	AS-088	ь	2	:	•	•		0.5	0.02
Aldrin	AS-086	Filter	Ş	:	•	•	•	0.25	0.003
Dieldrin	AS-086	Filter	9	•	•	•	1	0.25	9000
Dicyclopentadiene	AS-086	Filter	9	•	:	1	•	30	0.2
Hexachlorocyclopentadiene	AS-089F Filt AS-089T Tub	Filter Tube	22			• •		0.1	0.003
Fead	AS-085	Filter	2	•	•	•	:	0.05	က
Total Dust	AS-087	Filter	Š	;	•	•	•	15	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

Sampling Site: North Boundary M-1 Basin

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 2 May 1989 Date of Analysis: 17 May 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	8-hr TWA OSHAPEL Limit of mg/m3 mg/m3 Detection (ug)
Arsenic Trioxide	AS-002	Filter	9	111	227	•	•	0.01	0.2
Arsine	:	ь	•	:	•	•	•	0.2	0.02
Aldrin	:	Filter	•	:	1 f	:	•	0.25	0.003
Dieldrin	•	Filter	•	•	•	•	:	0.25	0.006
Dicyclopentadiene	•	Filter	•	•	:	•	:	30	0.2
Hexachlorocyclopentadiene	•	Filter	• •				: :	0.1	0.003
pear	AS-001	Filter	9	128	258.8	:	•	0.05	က
Total Dust	:	Filter	:	•	•	•	•	5	0.01

Equivalent exposure for mixture of compounds - ND

ND = Parameter not detected

*ACGIH time-weighted average

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem Sampling Site: Waste Trench, M-1 Pond

Date of Collection: 8 May 1989 Date of Analysis: 10, 15, 16 and 17 May 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA OSHAPEL mg/m3 mg/m3	OSHAPEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	AS-019	Filter	9	73	148	•	•	0.01	0.2
Arsine	AS-016 AS-021	ಕಕ	22	30	8. 8.		, , , ,	0.2	0.02
Aldrin	AS-017	Filter	2	s S	85.1	•	:	0.25	0.003
Dieldrin	AS-017	Filter	2	ភភ	85.1	•	•	0.25	900.0
Dicyclopentadiene	AS-017	Filter	2	55	85.1	4	•	30	0.2
Hexachlorocyclopentadiene	•	Filter	: 9			• •	• •	0.1	0.003
	AS-015 AS-020	Trbe	<u> </u>	2 2 2	2.2	•	•		
Lead	AS-018	Filter	2	73	148	•	•	0.05	ო
Total Dust	•	Filter	•	:	•	•	•	2	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

*ACGIH time-weighted average

Sampling Site: Headspace Cement Mixer, M-1 Pond

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 8 May 1989
Date of Analysis: 10, 15, 16 and 17 may 1989

COMPOUND	Field Sample Number	Sample Type	Found ug/sample	Sample Time (min)	Volume of Air (L)	Found mg/m3	8-hr TWA mg/m3	OSHAPEL mg/m3	Limit of Detection (ug)
Arsenic Trioxide	•	Filter	:	•	:	•	•	0.01	0.2
Arsine	AS-024 AS-027	55	22	00	100	: :		0.2	0.02
Aldrin	:	Filter	•	•	e 4 1		•	0.25	0.003
Dieldrin	•	Filter	•	•	•	•	•	0.25	900.0
Dicyclopentadiene	1	Filter	1	•	•	•	•	30	0.2
Hexachlorocyclopentadiene	AS-025 AS-026	Filter Tube Tube	22	00	0.53	1 1 1	• • •	0.1	0.003
peaq	:	Filter	•	:	:	:	:	0.05	က
Total Dust	•	Filter	•	•	•	•	4 4	<u>.</u>	0.01

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

*ACGIH time-weighted average

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Page 1

Sampling Site: M-1 Pond Cement Mixer Headspace

Sample Collected by: Daniel Burgess Sample Analysis by: DataChem

Date of Collection: 8 May1989 Date of Analysis: 27 June1989

Field Sample Sample XMPOUND Number Type	3CScan AS-022 Tedlar Bag	AS-023 Tedlar Bag
Found** ug/sample	2	2
Sample Time (sec)	0 4	35
Volume of Air (L)	1.47	1.18
Found mg/m3		•
Found 8-hr TWA mg/m3 mg/m3 [1	•
Limit of Detection (mg)	0.1	

Equivalent exposure for mixture of compounds = ND

ND = Parameter not detected

**Analytical results are invalid due to the length of holding time (7 weeks) prior to chemical analysis

APPENDIX C SAMPLE COLLECTION SUMMARY TABLE

Sample Collection Summary

Sa. TAb:-	Section	Location Number	Number of Samples	Sample Type	Matrix	Sample Numbers	Sample Date	Sample Depth (ft) or Water Level ((ft) from ground surface)	Analytes
rench	36-17N	т01	2	Sample Rinsate		WC36NT01-W001 WC36NT01-W003			GCMS Volatiles GCMS Semivolatiles
		102	1	Sample	Waste	WC36NT02-W001	4/25/89	3.5	Organochlorine Pestic Organosulfur Compound Thiodiglycol
		т03	1	Sample	Waste	WC36NT03-W001	4/25/89	4.5	DIMP/DMMP Arsenic
		т04	2	Sample Rinsate		WC36NT04-W001 WC36NT04-W003	4/26/89 4/26/89		Mercury ICP Metals DBCP
		т05	2	Sample Rinsate		WC36NT05-W001 WC36NT05-W003	5/4/89 5/4/89	5.0	Fluoroacetic Acid IMPA/MPA Moisture
		T06	2	Sample Rinsate		WC36NT06-W001 WC36NT06-W003		3.5	
		T07	0						
		T078	1	Sample	Waste	WC36NT07-W001	5/3/89	8.0	
		80T	0						
		T09A	2	Sample Rinsate		WC36NT09-W001 WC36NT09-W003	4/27/89 4/27/89		
		T10	1	Sample	Waste	WC36NT10-W001	5/1/89	2.5	
		T11	2	Sample Duplicate		WC36NT11-W001 WC36NT11-W002			
		T12	0						
		113	1	Sample	Waste	WC36NT13-W001	4/28/89	7.0	
		T14D	3	Sample Duplicate Rinsate	Waste	WC36NT14-W001 WC36NT14-W002 WC36NT14-W003	5/1/89	8.0	
		115	1	Sample	Waste	WC36NT15-W001	5/9/89	5.0	
		T16	2	Sample Rinsate		WC36NT16-W001 WC36NT17-W003		4.0	
		T17	0						

All samples of the waste matrix were cleared for army agents by the Army lab before shipment.

									 •
∤ell	36-17N	36080	2	Sample Rinsate	Water Water	WC36N080-G001 WC36N080-G003	5/1/89 5/1/89	16.0	GCMS Volatiles GCMS Semivolatiles Organochlorine Pestic
		36084	2	Sample Rinsate	Water Water	WC36N084-G001 WC36N084-G003	4/25/89 4/25/89	6.6	Organosulfur Compound Thiodiglycol DIMP/DMMP
		36085	2	Sample Rinsate	Water Water	WC36N085-G001 WC36N085-G003	5/2/89 5/1/89	1.0	Arsenic Mercury ICP Metals
		36088	2	Sample Rinsate	Water Water	WC36N088-G001 WC36N088-G003	4/28/89 4/28/89	16.0	DBCP Fluoroacetic Acid IMPA/MPA
_		36180	1	Sample	Water	WC36N180-G001	4/28/89	8.0	ATT BY THE
1		36187	1	Sample	Water	WC36N187-G001	6/8/89	14.8	

	36188	2	Sample Rinsate	Water Water	WC36N188-G001 WC36N188-G003	6/7/89 6/7/89	12.0		
	36189	3	Sample Duplicate Field Blank	Water Water Water	UC36N189-G001 UC36N189-G002 UC36N189-G005	6/7/89 6/7/89 6/7/89	11.2		
	36191	2	Sample Rinsate		NC36N191-G001 NC36N191-G003	6/12/89 6/12/89	32.1		
	36192	4	Sample Duplicate Rinsate Field Blank	Water Water	WC36N192-G001 WC36N192-G002 WC36N192-G003 WC36N192-G005	6/13/89 6/13/89 6/13/89 6/13/89	45.8		
36-17\$	36067	3	Sample Duplicate Rinsate	Water	WC36S067-G001 WC36S067-G002 WC36S067-G003	4/27/89 4/27/89 4/27/89	6.9		GCMS Volatiles GCMS Semivolatiles Organochlorine Pestic Organosulfur Compound
	36075	2	Sample Rinsate		WC36S075-G001 WC36S075-G003	4/18/89 4/18/89	9.9		Thiodiglycol DIMP/DMMP Arsenic
		2	Sample Rinsate		WC36S075-G011 WC36S075-G013	6/2/89 6/2/89	9.5		Mercury ICP Metals DBCP
		2	Sample Rinsate		WC36S075-G021 WC36S075-G023	6/6/89 6/6/89	9.4		Fluoroacetic Acid IMPA/MPA
		2	Sample Rinsate		WC36S075-G031 WC36S075-G033	6/15/89 6/15/89		:	
	36087	1	Sample	Water	WC36S087-G001	4/27/89	10.7		
	36190	2	Sample Rinsate		WC36S190-G001 WC36S190-G003	6/6/89 6/5/89	9.1		
		4	Sample Duplicate Rinsate Rinsate	Water Water	WC36S190-G011 WC36S190-G012 WC36S190-G013 WC36S190-G023	6/15/89 6/15/89 6/15/89 6/15/89			
	36590	2	Sample Rinsate		WC36S590-G001 WC36S590-G003	4/26/89 4/26/89	10.51		
	36591	1	Sample	Water	WC36S591-G001	4/26/89	2.4		, ,
	36593	1	Sample	Water	WC36S593-G001	4/25/89	18.5		
M-1	01077	3	Sample Duplicate Field Blank	Water	WCM-1077-G001 WCM-1077-G002 WCM-1007-G005	6/2/89 6/2/89 6/2/89	Not Available		Total Arsenic Dissolved Arsenic Total Mercury Dissolved Mercury
	01083	1	Sample	Water	WCM-1083-G001	6/13/89	7.2	!	, by a socreta merour y
	01503	2	Sample Rinsate		WCM-1503-G001 WCM-1503-G003	6/2/89 6/1/89	7.3		
	01504	3	Sample	Water	WCM-1504-G001	5/31/89	7.5		
			Rinsate Fltr Rnst		WCM-1504-G003 WCM-1504-G006	5/3/89 5/3/89			Total Arsenic & Mercu Dissolved Arsenic & M
	01524	1	Sample	Water	WCM-1524-G001	5/25/89	5.3		Total Arsenic
	36001	1	Sample		WC36S001-G001	5/5/89	11.7		Dissolved Arsenic Total Mercury Dissolved Mercury
	36193	See Sect	ion 36-4 Well	Sample	es ·				
36-4	36001	1	Sample	Water	WC36L001-G001	6/7/89	11.4		GCMS Volatiles

		36054	3	Sample	Water	WC36L054-G001	6/13/89	8.1		GCMS Semivolatiles Organochlorine Pestic
₩.		30034	•	Duplicate Rinsate	Water Water	NC36L054-G002 NC36L054-G003	6/13/89 6/13/89	•		Organosulfur Compound Thiodiglycol DIMP/DMMP
•		36055	2	Sample Field Blank	Water Water	WC36L055-G001 WC36L055-G005	6/13/89 6/13/89	10.9		Total Arsenic Dissolved Arsenic Total Mercury
		36058	1	Sample	Water	WC36L058-G001	6/12/89	3.6		Dissolved Mercury ICP Metals
		36076	1	Sample	Water	WC36L076-G001	6/14/89	13.4	į	TOP HELDIS
		36167	1	Sample	Water	WC36L167-G001	6/14/89	9.1		
		36193	1	Sample Sample	Water Water	WC36L193-G001 WC36L193-G011	6/7/89 6/15/89	8.8 8.8		
		36194	1	Sample	Water	WC36L194-G001	7/13/89	14.1		
										•
ring	36-17N	T01	2	Sample Rinsate	Soil Water	WC36NT01-S151 WC36NT01-S003	5/22/89 5/22/89	19.9 to 20.9		GCMS Volatiles GCMS Semivolatiles Organochlorine Pestic
		102	1	Sample	Soil	WC36NT02-S151	5/23/89	19.0 to 20.0		Organosulfur Compound Thiodiglycol
		36187	3	Sample	Soil	WC36N187-S011	5/5/89	0 to 1		DIMP/DMMP
				Sample	Soil	WC36N187-S041	5/5/89	4 to 5		Arsenic
				Duplicate	Soil	WC36N187-S042	5/5/89	4 to 5		Mercury ICP Metals
		36188	3	Sample	Soil	WC36N188-S011	5/3/89	0 to 1		DBCP
				Duplicate Sample	Soil Soil	WC36N188-S012 WC36N188-S041	5/3/89 5/3/89	0 to 1 4 to 5		Fluoroacetic Acid IMPA/MPA
		36189	4	Comple	Soil	WC36N189-S011	4/28/89	0 to 1		Moisture
		30107	•	Sample Sample	Soit	WC36N189-S041	4/28/89	4 to 5		}
				Rinsate	Water	WC36N189-S003	4/28/89			i
				Rinsate	Water	WC36N189-S013	4/28/€∀			
		36191	2	Sample Sample	Soil Denver	WC36N191-S041 WC36N191-S191	5/9/89 5/9/89	4 to 5 19 to 20.5		
		36192	4	Sample	Soil	WC36N192-S041	5/16/89	4 to 5		i
				Sample	Denver	WC36N192-S191	5/17/89	12.5 to 14.5		ĺ
				Duplicate Rinsate	Denver Water	WC36N192-\$192 WC36N192-\$193	5/17/89 5/17/89	12.5 to 14.5		
	36-17s	36190	2	Sample	Soil	WC36N190-S011	4/19/89	0 to 1		
				Sample	Soil	WC36N190-S041	4/20/89	4 to 5		
	M-1	001	4	Sample	Soil	WCM-1001-S001		0.3 to 0.8		Limited Suite *
				Sample	Soil	WCM-1001-S021	5/24/89	2.4 to 2.9		Limited Suite
				Sample	Soil	WCM-1001-S041	5/24/89	4 to 6.5		Expanded Suite **
				Sample Duplicate	Soil Soil	WCM-1001-S071 WCM-1001-S042	5/24/89 5/24/89	9.5 to 10 4 to 6.5		Limited Suite Expanded Suite
		002	4	Sample	Soil	WCM-1002-S001	6/8/89	0.5 to 1		Limited Suite
			·	Sample	Soil	WCM-1002-S021	6/8/89	2.5 to 3		Limited Suite
				Sample	Soil	WCM-1002-\$041	6/8/89	4 to 5		Expanded Suite
				Sample	Soil	WCM-1002-S071	6/8/89	9.5 to 10		Limited Suite
		003	4	Sample	Soil	WCM-1003-S021	5/30/89	2 to 2.5		Limited Suite
				Sample	Soil	WCM-1003-S041	5/30/89	4 to 5		Expanded Suite
				Sample Duplicate	Soil Soil	WCM-1003-S071 WCM-1003-S072	5/30/89 5/30/89	9 to 10 9 to 10		Limited Suite Limited Suite
		001		•						
		004	4	Sample Sample	Soil Soil	WCM-1004-S021 WCM-1004-S041	5/30/89 5/30/89	2.5 to 3 4 to 5		Limited Suite Expanded Suite
				Sample	Soil	WCM-1004-5041	5/30/89	9 to 9.5		Limited Suite
•				Rinsate	Water		5/30/89			Limited Suite
		005	5	Sample	Soil	WCM-1005-S001	5/25/89	0 to 0.5		Limited Suite

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					5/25/89	2 to 2.5	1	imited Suite
		Sample		BOM IGAS AGE.	5/25/89	4 to 5	-	xpanded Suite
		Sample		MON 1000 40 :	5/25/89	7.5 to 8	1	imited Suite
		Sample	••••	Mari 1855 251.	5/25/89	4 to 5	Ε	xpanded Suite
		Duplicate	Soil	WCM-1005-\$042	3/23/07	4 45 5		•
		_		4004-11044	5/23/89	4 to 6.5	1	Expanded Suite
006	7	Sample		MCH-1006-W041	5/23/89	8 to 8.5	1	Limited Suite
		Sample	•••	MCM-1006-5071	5/23/89	19 to 20	:	Limited Suite
				MCH-1006-0191		4 to 6.5	1	Expanded Suite
		Duplicate		MCH-1006-W042	5/23/89	19 to 20	1	Limited Suite
		Duplicate		MCH-1006-0192	5/23/89	17 (0 24		Limited Suite
		Rinsate		MCH-1006-\$073	5/23/89			Limited Suite
		Rinsate	Water	UCH-1006-0193	5/23/89			
				4007 1014	5/22/89	7 to 8		Expanded Suite
007	2	Sample	Vaste	MCH-1007-W041	5/22/89	8.5 to 9.0		Limited Suite
		Sample	Soil	WCM-1007-\$071	3/22/07	4.5 45 745		
				4000 June 1	5/25/89	4 to 5		Expanded Suite
800	2	Sample		WCH-1008-W041	5/25/89	4 44 4		Expanded Suite
		Rinsate	Water	MCM-1008-W043	3/23/61			
				4007 0074	5/10/89	2.5 to 3		Limited Suite
01083	3	Sample	Soil	MCM-1083-5021	5/11/89	4 to 5.5		Expanded Suite
		Sample	Soil	HCH-1083-\$041	5/11/89	7.5 to 8		Limited Suite
		Sample	Soil	MCH-1083-\$071	3/11/09	1.5 .0 0		
					E /14 /90	0.5 to 1		Limited Suite
36193	4	Sample	Soil	uc36s193-s001	5/16/89	4 to 5		Expanded Suite
•		Sample	Soil	WC36S193-S041	5/16/89	10 to 11		Limited Suite
		Sample	Soil	MC36\$193-\$121	5/16/89	10 (0 1)		Limited Suite
		Rinsate	Water	MC368193-8123	5/16/89			
					4 0	GCMS Volatiles		
 Limited 	Suite:	GCMS Semivo	latiles	** Expande	a Suite:	GCMS Semivolatile	•	
		Arsenic				Organochlorine Per	cticides	
		Hercury				Organosulfur Comp	aunde	
							04.43	
						Thiodiglycol		
						• • • • • • • • • • • • • • • • • • • •		
						Arsenic		
						Mercury		
						ICP Metals		
						Moisture		
								GCMS Volatiles
36194	5	Sample	Soil	WC36L194-S001		0 to 1	1	GCMS Semivolatiles
30174	•	Sample	Soil	WC36L194-S041			1	Organochlorine Pestic
		Sample	Soil	WC36L194-S121	6/15/89	19 to 20	ļ	Organosulfur Compound
		Duplicate	Soil	WC36L194-S042	6/15/89	4 to 5	!	
		Rinsate	Water	WC36L194-S003	6/15/89)	1	Thiodiglycol
		KIIISECC					ļ	DIMP/DMMP
							!	Total Arsenic
							ļ	Dissolved Arsenic
							Į	Total Mercury
							t	Dissolved Mercury
							ŀ	ICP Metals
								Moisture
	_		11	WCH-115V-W00	5/0/80		{1	GCMS Volatiles
Within	5	Sample		WCM-115V-W00	5,0,80		Ì	GCMS Semivolatiles
East		Duplicate	Waste	MCM-1124-MON	2 377707		į	Organochlorine Pestic
Basin							i	Organosulfur Compound
							Ì	Thiodiglycol
							i	DIMP/DMMP
							j	Arsenic
							1	Mercury
							i	ICP Metals
								PCBs
							1	Dioxins
							1	Moisture
								Halatait
								GCMS Volatiles
		Rinsate	Wate	r WCM-115V-W00	3 5/8/89			GCMS Semivolatiles
		Rinsate	Vate	r WCH-115V-W01	3 5/8/89			Organochlorine Pestic
		Rinsate		r WCH-115V-W02	3 5/8/89)	i	Organosulfur Compound
		~					,	Thiodiglycol
Composit	e 4	Sample	Soil	WCM-1ISV-SAC	1 5/9/89	•		1110Gigtycot
COMPOSIT	~ ~							

36-4

H-1

ISV

Soil Duplicate Soil MCM-115V-SA02 5/9/89
Around Sample Soil MCM-115V-SB01 5/9/89
Basins Duplicate Soil MCM-115V-SB02 5/9/89

DIMP/DHMP Arsenic Mercury ICP Metals PCBs Moisture

All samples of the waste matrix were cleared for army agents by the Army lab before shipment.

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APPENDIX D WASTE MATERIAL SUMMARY TABLE

ORUM MUMBER	DATE OBTAINED	WASTE STORAGE OR STREING RREA	TYPE OF NASTE		DATE OF SAMPLE(S)	DATE TO WASTE STORAGE	COC ?/ INITIATED (Y/N)	REMARKS
6063	4/4/87	WASTE STRG.	PPE			4/24/89	H	
6064	4/5/89	WASTE STAG.	PPE			4/24/89	M	
6065	4/5/89	WASTE STRG.	PPE			5/23/89	H	
6069	4/14/89	WASTE STRG.	PPE			4/24/89	H	
6070	4/14/89	WASTE STRG.	EMPTY			6/16/89	Y	
6071	4/14/89	WASTE STRG.	PPE			4/24/89	H	
13001	4/14/69	WASTE STRG.	PPE			4/24/89	N	
13062	4/14/89	WASTE STAG.	PPE			4/24/89	ĸ	
13003	4/17/89	WASTE STRG.	PPE			4/24/89	ĸ	
13004	4/17/89	WASTE STRG.	PPE			4/24/89	N	
13005	4/17/89	WASTE STRG.	PPE			5/11/89	N	
13006	4/17/89	WASTE STRG.	PPE			5/23/89	N	
13007	4/17/89	HOLE 36-190	SOIL	WC36S190-S011	4/19/89	6/12/89	Y	
13008	4/17/85	WASTE STAG.	PPE	VC36S190-S041	4/20/89	5/23/89	N	
13009	4/17/89	WESTE SIEG.	PPE			5/1/89	N	
13010	4/17/89	WASTE STRG.	PPE			5/1/89	N	
13011	4/17/69	WASTE STRG.	PFE			8/4/89	Y	5/8 INCH HOSE
13017	4/17/69	WASTE STRG.	PPE			4/24/89	N	
13013	4/19/85	WASTE STRG.	PPE			5/1/89	ĸ	
13014	1/19/89	HOLE 36-190	SOIL	WC36519G-S011	4/19/89	6/12/89	Y	
13015 4	1/19/89	WASTE STRG.	FFE	WC365190-5041	4/20/89	5/23/89	N	
13016 4	/19/85	VASTE STRG.	PPE			5/11/89	N	
13017 4	/19/89	VASTE STRG.	PPE			5/1/89	N	

DRUM NUMBER	DATE OBTAINED	VASTE STORAGE OR STAGING AREA	TYPE OF WASTE	SAMPLE NO.	DATE OF SAMPLE(S)	DATE TO WASTE STORAGE	COC ?/ INITIATED (Y/N)	REMARKS
13018	4/19/89	WASTE STRG.	PPE			5/1/89	K	
13019	4/19/89	WASTE STRG.	PPE			4/24/89	N	
13020	4/19/89	WASTE STRG.	PPE			5/1/89	H	
13021	4/24/89	WASTE STRG.	PPE			5/1/89	N	
13022	4/24/89	BORING 36-191	SOIL	UC36H191-S041	5/9/89	6/13/89	Y	
13023	4/24/89	BORING 36-192	SOIL	UC36N191-S191 UC36N192-5041	5/9/89 5/16/89	6/15/89	*	
13024	4/24/89	BGRING 36-190	SOIL	WC34N192-5191 WC34S190-5011	5/17/89 4/19/89	6/12/89	Y	
13025	4/24/89	WASTE STRG.	EMPTY	WC365190-5041	4/20/89	8/4/89	Y	
13026	4/24/89	WASTE STRG.	PPE			5/1/89	H	
13027	4/24/89	WASTE STRG.	PFE			5/1/89	Ħ	
13078	4/24/89	WASTE STRG.	empty			6/16/89	Y	
13029	4/24/89	Waste Strg.	PPE			5/11/89	N	
13030	4/24/89	WASTE STRG.	PPE			5/11/89	H	
13031	4/24/89	BASTE STRG.	PPE			6/21/69	Y	
13032	4/24/89	WASTE STRG.	PFE			5/11/89	N	
13033	4/24/89	EDRING 36-189	SOIL	WC36N189-S011	4/28/89	6/13/89	Y	
13034	4/24/89	WASTE STEG.	PřE	WC36N1B9-S041	4/28/87	5/23/89	N	
13035	4/24/89	BDR1NG 36-189	SOIL	WC36N189-S011	4/28/89	6/13/89	Y	
13036	4/74/89	BORING 36-189	SOIL	WE36N189-S041 WE36N189-S011	4/28/89 4/28/89	6/12/69	Y	WET BUT WILL PROBABLY
13037	4/24/89	EDRING 36-187	SOIL	WC36N189-5041 WC36N187-5011	4/28/89 5/5/89	6/12/89	Y	PASS FILTER TEST
13038	4/74/89	BORING 34-187	SOIL	WC36N187-S041 WC36N187-S011	5/5/89 5/5/89	6/13/89	Y	
13039	4/24/89	WASTE STRG.	PPE	WC36N187-S041	5/5/89	5/11/89	Я	
13040	4/24/89	TRENCK 1	SOIL	UC36NT01-S151	5/26/89	6/13/89	Y	
13041	4/28/89	WASTE STRE.	PPE			5/11/69	N	

MUAD Rabnum	DATE OBTAINED	WASTE STORAGE OR STAGING AREA	TYPE OF WASTE	SAMPLE NO.	DATE OF SAMPLE(S)	DATE TO WASTE STORAGE	COC ?/ INITIATED (Y/N)	REMARKS
13042	4/28/89	EOR1HG 36-187	SOIL	UC36N187-5011 UC36N187-5041	5/5/89 5/5/89	4/13/89	Y	
13043	4/28/89	MASTE STRG.	PPE	erabutes, and t	7/ 7/ 61	6/16/89	Y	
13044	4/28/89	M-1 TRENCH SOIL	SOIL			6/15/89	Y	SEE ISV SAMPLE
13045	4/28/89	BORING 36-188	SOIL	WC36N188-S011	5/3/89	6/12/89	Y	
13046	4/28/89	WASTE STRG.	PPE	WC36H188-5041	5/3/89	5/11/89	ĸ	
13047	4/28/89	BORING 01-083	SOIL	WCM-1083-5021 WCM-1083-5041 WCM-1083-5071	5/10/89 5/11/89 5/11/89	6/15/89	Y	
13048	4/28/89	WASTE STRG.	PPE	BC11-1407-2071	3/11/07	5/23/89	N	
13049	4/28/89	WASTE STRG.	PPE			5/11/89	H	
13050	4/28/89	WASTE STRG.	PPE			5/11/89	Н	
13051	5/1/89	WASTE STRG.	PPE			4/16/89	Y	
13052	5/1/89	WASTE STRG.	EMPTY			8/4/89	Y	
13053	5/1/89	WASTE STRG.	EMPTY			8/4/89	Y	
13054	5/1/89	WASTE STRG.	PPE & PLA	STIC		6/12/89	Y	
13055	5/1/89	WASTE STRG.	PPE			5/23/89	Y	
13056	5/1/89	M-1 BASINS	501L	WEM-115V-5A01	5/9/89		н	ISV SAMPLE AVAITING RETURN FROM DATACHEM
13057	5/1/99	M-1 BASINS	SOIL	WEM-115V-SA07 WEM-115V-SB01	5/9/69 5/9/89		н	ISV SAMPLE AWAITING RETURN FROM DATACHEM
13056	5/1/89	BORING 36-188	SOIL	WCM-115V-5802 WC36N188-5011	5/9/89 5/3/89	6/13/89	۲	RETURNS TRUST PRINCIPLES
13059	5/1/89	WASTE STRG.	PPE	WC36N188-S041	5/3/89	5/23/89	N	
13060	5/1/87	EORING 36-188	SOIL	WC36M188-S011 WC36M188-S041	5/3/89	6/12/89	Y	
13061	5/8/87	WASTE STRG.	PPE			6/21/89	Y	
13062	5/8/89	WASTE STRG.	EMPTY			8/4/89	Y	
13063	5/8/89	WASTE STEE.	PPE			7/17/89	Y	
13064	5/8/89	WASTE STRG.	FPE			5/23/89	N	

DRUM Number	DATE OBTAINED	WASTE STORAGE OR STAGING AREA	TYPE OF WASTE	SAMPLE NO.	DATE DF SAMPLE(S)	BATE TO WASTE STORAGE	INITIATED (Y/N)	REMARKS
13065	5/8/89	BORING 34-192	SOIL	UC36N192-5041 UC36N192-5191	5/16/89 5/17/89	6/15/89	Y	
13066	5/8/89	WASTE STRG.	PPE			6/16/89	Y	
13067	5/8/89	WASTE STRG.	PPE			5/23/89	H	
13068	5/8/89	BORING 36-192	SOIL	UC36H192-S041	5/16/89	6/15/89	r	
13069	5/8/89	BORING 36-191	SOIL	WC36H192-5191 WC36H191-5041	5/17/89 5/9/89	6/13/89	*	
13070	5/8/89	WASTE STRG.	PPE	UC36N191-S191	5/9/89	5/23/89	N	
13071	5/8/89	WASTE STRG.	PPE			5/23/89	N	
13072	5/8/89	WASTE STRG.	EMPTY			8/4/89	Y	
13073	5/8/89	BORING 36-191	SOIL	WC36N191-S041	5/9/89	6/13/89	Y	
13074	5/8/89	BORING 36-191	SOIL	WE36N191-5191 WE36N191-5041	5/9/89 5/9/89	6/13/89	ť	
13075	5/8/89	EORING 34-192	SOIL	WE36N191-5191 WE36N192-5041	5/9/89 5/16/89	6/15/89	Y	
13076	5/10/89	WASTE STRG.	EMPTY	VE36N192~5191	5/17/89	6/16/89	Y	
13077	5/10/89	WASTE STRG.	EMPTY			8/4/89	Y	
13078	5/10/89	WASTE STRG.	PPE			6/21/89	Y	
13079 !	5/10/89	WASTE STRG.	rpe			5/23/89	N	
13080	5/10/89	BORING 36-191	SOIL	WC36N191-S041	5/9/89	6/13/89	Y	
13081 5	5/10/89	BORING 36-192	S01L	WC36N191-S191 WC36H19Z-S041	5/9/89 5/16/89	6/15/89	Y	
13082 5	5/10/89	WASTE STRG.	PPE	WC36N192-S191	5/17/89	6/16/89	y	
13083 5	5/10/89	BORING 36-192	SOIL	WC36N192-5041		4/15/89	Y	
13084 5	5/10/87 I	BORING 36-191	SOIL	WC36N19Z-5191 WC36N191-5041		6/13/89	Y	
13065 5	5/10/89 i	VASTE STRG.	EMPTY	WC36N191-5191	5/9/89	8/4/89	Y	
13086 5	/10/89 i	IASTE STRG.	PPF			5/23/89	N	
13087 5	/10/89 4	IASTE STRG.	PPE			5/23/89	N	

DRUM NUMBER	DATE OBTAINED	VASTE STORAGE OR STAGING AREA	TYPE OF HASTE	SAMPLE NO.	DATE OF SAMPLE(S)	DATE TO WASTE STORAGE	COC ?/ INITIATED (Y/N)	REMARKS
13088	5/10/89	BORING 01-083	SOIL	UCM-1083-5021 UCM-1083-5041 UCM-1083-5071	5/10/89 5/11/89 5/11/89	6/15/89	Y	***************************************
13089	5/10/89	WASTE STRG.	EMPTY			6/21/89	Y	
13090	5/10/89	WASTE STRG.	PPE			5/23/89	N	
13091	5/10/89	BORING 36-192	SOIL	WE36N192-S041	5/14/89	6/15/89	4	
13092	5/10/89	BORING 36-192	SOIL	UC36N192-5191 UC36N192-5041	5/17/89 5/14/89	6/15/89	Y	
13093	5/10/89	WASTE STRG.	EMPTY	WC36H19Z-S191	5/17/89	6/16/89	Y	
13094	5/10/89	WASTE STRG.	PPE			8/4/89	Y	5/8 INCH PUMP HOSE
13095	5/10/89	WASTE STRG.	PPE			6/16/89	۲	
13096	5/10/89	WASTE STRG.	EMPTY			8/4/89	4	
13097	5/10/89	WASTE STRG.	EMPTY			6/16/89	Y	
13098	5/10/89	WASTE STRG.	319			5/23/89	N	
13099 5	5/10/89	WASTE STRG.	FPE			6/16/89	Y	
13100 5	5/10/89	WASTE STAG.	PFE			5/23/89	N	
13101 5	5/11/89	M-1 BORING 6	SOIL	WCM-1006-5071	5/23/89	6/15/89	Y	
13102 5	5/11/89	VASTE STRG.	PPE	WCM-1006-D191	5/23/89	5/23/89	N	
13103 5	5/11/89	WASTE STRG.	PPE			6/16/89	Y	
13104 5	5/11/89	BORING 01-083	SOIL	WCM-1083-5071 WCM-1083-5041	5/10/89 5/11/89	6/15/89	Y	
13105 5	711/89	WASTE STRG.	PPE	WCM-1083-S071	5/11/89	6/16/89	Y	
13106 5	7117 89	BORING 36-193	SOIL	WC365193-5001 WC365193-5041 WC345193-6171	5/16/89 5/16/89	6/15/89	Y	
13107 5	/11/89 1	ASTE STRG.	PPE	WC36S193-S121	5/16/89	6/16/89	Y	
13108 5	/11/89	IASTE STRG.	EMPTY			6/21/89	Y	
13109 5.	/11/89 6	ASTE STRG.	EMPTY			8/4/89	y	

1	ORUM Number	DATE OBTAINED	VASTE STORAGE OR STAGING AREA	TYPE OF WASTE	SAMPLE NO.	DATE DF SAMPLE(S)	DATE TO WASTE STORAGE	COC ?/ INITIATED (Y/N)	REMARKS
i	13177	6/5/89	WASTE STRG.	PPE			8/4/89	Y	
 -	13178	6/5/89	WASTE STRG.	PPE			8/4/89	Y	5/8 INCH PUMP HOSE
1	13179	6/5/89	WASTE STRG.	PPE			6/16/89	Y	
1	13180	6/5/89	WASTE STRG.	EMFTY			6/16/89	Y	
} 	13181	6/5/89	WASTE STRG.	EMPTY			6/21/89	Y	
	13182	6/5/89	WASTE STRG.	PFE			6/16/89	Y	
 	13183	6/5/89	M-1 BORING 2	SOIL	WCM-1002-5001 WCM-1002-5021 WCM-1002-5041 WCM-1002-5071	6/8/89	6/15/89	Y	
	13184	6/5/89	WASTE STRG.	FPE			6/16/89	Y	
	13185	6/5/89	WASTE STRG.	EMPTY			8/4/89	Y	

SOIL SAMPLES LISTED WITH ORIGINAL SAMPLE LOCATION. DRUMS ARE IN STAGING AREA.

DRUM MUMBER	OATE OBTAINED	WASTE STORAGE OR STAGING AREA	TYPE OF WASTE	SAMPLE NO.	DATE OF SAMPLE(S)	DATE TO WASTE STORAGE	COC ?/ INITIATED (Y/N)	REMARKS
13132	5/23/89	TRENCH 2	SOIL	MC36NT02-5151	5/23/89	6/13/89	γ	****************
13133	5/23/89	WASTE STRG.	PPE			8/4/89	Y	
13134	5/23/89	WASTE STRG.	PPE			8/4/89	Y	5/8 INCH PUMP HOSE
13135	5/23/89	M-1 BORING 6	SOIL	WCM-1006-5071	5/23/89	6/15/89	Y	
13136	5/23/89	M-1 BORING 6	SOIL	VCM-1006-0191 VCM-1006-5071	5/23/89 5/23/89	6/15/89	Y	
13137	5/23/89	WASTE STRG.	PPE	WCM-1006-D191	5/23/89	6/16/89	Y	
13138	5/23/89	WASTE STRG.	EMPTY			8/4/89	Y	
13139	5/23/89	WASTE STRG.	EMPTY			7/10/89	Y	
13140	5/23/89	WASTE STRE.	PPE			6/16/89	Y	PLUS PLASTIC
13141	5/24/89	WASTE STRG.	PPE			6/16/89	Y	
13142	5/24/89	WASTE STRG.	PPE			6/16/89	Y	
13143 5	5/24/89	WASTE STRG.	PPE			6/16/89	Y	
13144 5	5/24/69	WASTE STRG.	PPE			6/16/89	Y	
13145 5	5/24/89	WASTE STRG.	PPE			6/16/89	Y	
13146 5	/24/89	WASTE STRG.	PPE			6/16/89	Y	
13147 5	/24/89	WASTE STRG.	PPE			6/16/89	Y	
13148 5	/24/89	WASTE STAG.	PPE			6/16/89	Y	
13149 5	/24/89	VASTE STRG.	PFE			G/16/89	Y	
13150 5	/24/89	WASTE STRG.	PPE			6/16/89	Y	PLUS PLASTIC
13151 5	/24/89 1	M-1 BORING 8	SOIL	WCM-1008-5071	5/25/89	6/15/89	¥	
13152 5	/24/89 i	1-1 BORING 5	;	WCM-1005-S071 WCM-1005-S001 WCM-1005-S021	5/25/69 5/25/89	6/15/89	*	
13153 5.	/24/89 1	VASTE STRG.	EMPTY	WCM-1005-5041	5/25/89	6/16/89	Y	
13154 5	/24/89 8	SORING 36-194	SOIL	NCM36L194-5001	6/15/89	6/21/89	Y	

•)RUM JMBER	DATE	WASTE STORAGE OR		SAMPLE NO.	DATE OF	DATE TO	COC ?/ INITIATED (Y/N)	REMARKS	1
1					WCM36L194-S041 WCM36L194-S121					i
į	13155	5/24/89	WASTE STRG.	PPE	#C(()0[174-3121		8/4/87	Y		!
1	13156	5/24/89	WASTE STRG.	EMPTY			6/16/89	Y		•
-	13157	5/24/89	WASTE STRE.	EMPTY			6/21/89	Y		}
ļ .	13158	5/24/89	WASTE STRE.	EMPTY			6/21/89	Y		1
	13159	5/24/89	WASTE STRG.	EMPTY			4/16/89	Y		1
; {	13160	5/24/89	M-1 BORING 3	SOIL	WCM-1003-5021	5/30/89	6/15/89	Y		1
1] [13161	5/30/89	M-1 BORING 4	SOIL	WCM-1004-5021 WCM-1004-5021 WCM-1004-5041	5/30/89 5/30/89	6/15/89	Y		1
1 [1	13167	5/30/89	WASTE STRG.	EMPTY	WEM-1004-5071	5/30/89	6/16/89	Y		!
{ 1	13163	5/30/89	WASTE STAG.	FPE			6/16/89	Y		1
! } 1	13164	5/30/89	WASTE STRG.	EMPTY			6/16/89	Y		1
1	13165	5/30/89	WASTE STRG.	EMPTY			6/21/69	Y		1
1	13166	5/30/89	WASTE STRG.	EMPTY			6/16/89	Y	AT 36192 6/6	l
1	13167	5/30/89	WASTE STRG.	EMPTY			6/16/89	Y		!
1	13168	5/36/89	WASTE STRG.	EMPTY			6/21/89	Y	AT 36192 6/6	1
1	13169	5/30/89	WASTE STAG.	PFE			6/16/89	Y	! !	
1	3170	5/30/89	WASTE STRG.	PPE			6/21/89	Y	! !	
: 1	3171	6/5/89	WASTE STRG.	PPE			6/16/89	Y		
1	3172	6/5/89	WASTE STRG.	EMFTY			6/16/89	Y	!	
1	3173	6/5/89	WASTE STRG.	PPE			6/16/89	Y	[]	
1	3174	6/5/89	BORING 36-194	SOIL	WE36L194-S001 WE36L194-S041	6/15/89	6/21/89	Y	1	
1	3175 (5/5/89	WASTE STRG.	EMPTY	WC36L194-5121		6/16/89	Y		
	3176 6	5/5/89 I	VASTE STRG.	EMPTY			6/16/89	Y		

MUAG R38MUM	DATE OBTAINED	WASTE STORAGE OR STAGING AREA	TYPE OF WASTE	SAMPLE NO.	DRTE OF SAMPLE(S)	DATE TO Waste Storage	COC ?/ INITIATED (Y/N)	REMARKS
13110	5/11/89	BORING 36-193	SOIL	WC34S193-S001 WC34S193-S041 WC36S193-S121	5/16/89 5/16/89 5/16/89	6/15/89	Y	
13111	5/16/89	WASTE STRE.	EMPTY			5/23/89	r	NOLE IN WALL OF Drum, return to Weston
13117	5/16/89	BORING 36-194	SOIL	NC36L194-S001 NC36L194-S041 NC36L194-S121	6/15/89	6/21/89	*	Sharif REsources to Section
13113	5/16/89	BORING 36-192	SOIL	WC36N192-S041 WC36N192-S191	5/16/89 5/17/89	6/15/89	Y	
13114	5/16/89	WASTE STRG.	PPE			6/16/89	Y	
13115	5/16/89	BORING 36-192	501L	WC36N192-5041 WC36N192-5191	5/16/89 5/17/89	6/15/89	Y	
13116	5/16/89	BORING 36-192	SOIL	UC36N192-S041 UC36N192-S191	5/16/89 5/17/89	6/15/89	Y	
13117	5/16/89	BORING 36-192	SOIL	WE36N192-S041 WE36N192-S191	5/16/89 5/17/89	6/15/89	Y	
13118	5/16/89	BORING 36-193	SOIL	WC365193-5001 WC365193-5041 WC365193-5121	5/16/89 5/16/89 5/16/89	8/7/89	Y	
13119	5/16/89	WASTE STRG.	PPE	uc/031// 3121	J/ 10/ 0/	5/23/89	Ħ	
13120 5	5/16/89	WASTE STRG.	PPE			6/16/89	Y	
13121 5	5/16/89	BORING 36-192	SOIL	WC36N192-5041 WC36N192-5191	5/16/89 5/17/89	6/15/69	Y	
13122 5	5/16/69	WASTE STRG.	PPE	#C/0N172~3171	3717707	6/16/89	Y	
13123 5	716/89	WASTE STRG.	EMPTY			6/16/89	y	
13124 5	/18/89	M-1 BORING 7	SOIL	WCM-1007-5071	5/22/89	6/15/89	۲	
13125 5	716/69	WASTE STRG.	EMPTY			8/7/87	Y	
13126 5	716/89	WASTE STRG.	PPE			6/16/89	Y	
13127 5	/16/89	NASTE STRE. ,	PPE			6/21/89	Y	
13128 5	/16/89	NASTE STRG.	EMPTY			8/4/89	Y	
13129 5	/16/89	WASTE STRE.	EMPTY			6/16/89	Y	
13150 5	/16/89	RASTE STRG.	PPE			6/16/89	Y	
13131 5	/23/89 1	WASTE STRG.	EMPTY			8/4/89	Y	

APPENDIX E BORING LOGS

Arevanal

LOCATION 36-17	Ineu- ce		DATE STAR	TED _	-760	1-1 100
MG AGENCY Datum Exploration In	c Tony Rode	3	DATE STAR	HEO ST	5/89	/3/8/89 Samples // w/polybo
SUIPMENT CM & 1750	IORUL MIT	Culter	NO. OF	OIS		SAMPLER W/Polylo 3"00 Splitspan liners
THE TYPE OF CASING 4" School b	CALL PO) Head	SAUPLES	FIR		COMPL 24 HAS.
		70	ELEV.	<u> </u>		CHECKED BY
of Perforation 010' (NO10) slotted	FROM 11	J. 1	1_	_		
THE OF PACK Colorado #10- #20	8.5	10 2 2 2 T		021 ; 1	n	
or seal Bentonite Pellets	FROM 3.5	8.2				
DESCRIPTION		Lithology Plez	ometer Fig. 5		Penetra Boat (Boat) (C)	REMARKS (Orlil Rate, Fluid toos, Oder, etc.)
sandy Silt-brown, blace roofs, damp. loose (o silty Sand-yellowish broccasional reddish be clay inclussions, dry (sm) silty Sand-ayellowish yellow, loose, dry, fin (sm) silty Sand-asabove, or reddish brown hard inclussions (sm-sc) silty Sand-darkyellow reddish sown hard inclussions (sm-sc) silty Sand-darkyellow reddish grain, trace damp-moist, mod de loose. (ml)	brown, e grain with clay	 		<u></u>		Drillers + Geologist wearing level B/t Protection. HNU readings are not above hackground unless noted. Background reading are 02 PAM

JECT NO. 22238B

SHEET___OF__3_

silty Sand to a sandy Silt-as above, moist, stiff- mod dense (mL) Silty Sand-as above, clayey, very moist (mL) No recovery The Shoe dinot hold the Sample from 1 to 14. This is because it wa a saturated very fine sand.	_		GRAPH		5		54	ET	. ES	REMARKS
silty Sand to a sandy Silt-as above, moist, stiff-mod dense (mL) Silty Sand-as above, clayey, very moist No recovery Silty Sand-yellowish brown, very fine sand. Free water a salver a salver a silty Sand-yellowish brown, very fine sand.		DESCRIPTION	Cithology	Pleasure for metal tofter	Cente	Pie Econ	464	3		(Dritt Rale, Fluid less, Odor, etc
Silty Sand - as above, Clayey, very moist (m2) No recovery The Shoe dinot hold the Sample from 1 to 14'. This is because it was a saturated very fine sand. Free water a 13'.	·	above moist, stiff-								
clayey, very moist (mL) No recovery The Shoe dinot hold the Sample from 1 to 14'. This is because it was a saturated very fine sand. Free water a saturated as a saturated very fine sand.	¥	as above		Parameter		-				
because it was a saturated a saturated very fine sand. Free water a saturated very fine sand.	***	(mx) very moist		marchine colors	7					The Shoe did not hold the, Sample from 13
	**************************************	very fine grain, wet, loose		The state of the s						herause it was a saturated very fine sand. Free water at

CT NO. 22238B

SHEET 2 OF 3

Clayer S: It-gellowish brown, with trace very fine grain sand, trace dark brown elayery silty Sand - yellowish brown, fine grain, wet, loose Clayer S: It-gellowish brown, fine grain, wet, loose Clayer S: It-gellowish brown, fine grain, wet, loose Baring terminated at 22.2' Baring terminated at 22.2'	clayey Silt-yellowish brown, with trace very fine grain sand, trace dark brown clayey inclussions, moist, Stiff(ml)	Jihabogy	To UDG	lesion 3	- 1	TO TO THE PARTY OF	REMARKS	
Clayey S: It-yellowish brown, with trace very fine grain sand, trace dark brown clayey inclussions, moist, stiff(ml) silty Sand yellowish brown, fine grain, wet, loose (Sm) The hole was cover drilled with a 10" auger (10%) cutter head) offer being the 6" auger were pulled.	clayey Silt-yellowish brown, with trace very fine grain sand, trace dark brown clayey inclussions, moist, stiff(ml)	Jihabogy	With the state of	1987w3	- 1	10 10 10 10 10 10 10 10 10 10 10 10 10 1	REMARKS (Drill Rate, Fluid los	na, Odor, etc)
Clayey S: It-yallowish brown, with trace very fine grain sand, trace clark brown clayey inclussions, moist, Stiff(m) silty Sand-yellowish brown, fine grain, wet, loose (sm) Clayey S: It-yellowish brown, with hard tan s: Ity clay inclussions (m)	clayey Silt-yellowish brown, with trace very fine grain sand, trace dark brown clayey inclussions, moist, Stiff(ml)		Manager Comment of the Comment of th					
	inclussions (ML)						a 10"au cutterh boring th	ger (105)8 ead) ofte e 6"auge

	LOCATION Sec 36-12					H AND			
IN	G AGENCY Destura Exploration IN ORILLER				FULL	SHEQ		3/84/	5/4189
٠	EQUIPMENT CME 750			COMI	ME TO	0 + 0	EPTH	23.5	SAUPLER -/Polybus -/Polybus Loser
(N	GUETION Hollow Stem Auger PORICE BITG	18 Cat	ier		10. 0 4PLE	<u>s :</u>	UIST.		UNDIST. 10
4	ID TYPE OF CASING 4" Schoolale DUC				ATER		FINS	7	COMPL. 24 HRS.
06	PENFORATION . 010" (No. 10) Slotter FROM 10,9	10 20°	FT.	1000					CHECKED BY
44	TYPE OF PACK Coloresto #10- 201 FROM 815	10,23,-		\mathbb{R}	nb	W	ils	רוט	
01	SEAL Bentonito Pellets 1500 3.5	10 8.5°	FT						
7	26V10V11.18 1-6115.17 1 21.2	GHAPN		×		F	54	MPLES	
1	DESCRIPTION	Lithology			Spire	38	2	計画を主	REMARKS
1	•	}	-	letion	-0	=	ě	A STATE OF	(Orlil Role, Fluid Ioss, Odor, etc.
ţ	sandy Silt-black abundant roots -	64.66	V	N		7			Drillers and geologic
Ŧ	organic matter loose, dry - damp	17.17	N	N	1	7	\/		in level B/c pro-
Ţ.			$ \mathcal{A} $	14	- 1	4	4/1		tective clothing.
‡	Silty Sand - tan, yellow Ibraun,		N	N	- {	1	:		1
t	fine grain, occasionally clayers	[N	N	1	1	: 1		}
+	loose, dry (sm)	1.1:11:	N	N		1	11.		HNU readings
ł	, -, 1 (2 11)		\mathbb{N}	N	Ì	1	:/ \		O (background)
F		{	1		- {	1		1	unless noted
F	•	F	[]	[]		7			10 180
ŧ		11.17.	N	N		1			
‡		1 1 1 .	N	17	1	1	1	}	The holewas
‡			N	N	- }	1	1/1		overdrilled with
±			N	M	- {	#	: \//	1	a 10, ander (10 %
	silty Sand - as above	111	N		- 1	7	- /	1	cutterhead) after
t	7 , 2 , 3 , 5	11.[]		LI	ł	t	: 11	' i	the G"augers
Ŧ]	N	N	- {	£	_/	•	were removed.
F	•	11.11			- }	1	: }} }		
Ŧ		1	X	17	1	1	711	1	
‡	•			H	J	-	411	1	
ţ.		1-1-1-1	1/	I	}	- 1	$I \setminus I$	1	
ţ	S. J. U. U		1	1/	- }	1	1 11	1	
‡	" Sand - yellow/brown, orange/		C	11		1			
t	blown, very fine to fine		11	1/	- {	1	\ /	1	
Ł	Jiain, loose 1 dry (SP)	S	'	11	- {	Ł	1/1		
F	1 100 20 1 013 (21)		И	N	į	Ŧ	\	1	
			ľJ	11		Ŧ	. []	1	
ţ-		٠ ٠	V	1	1	-	411	1	
ţ	••		11	11	1	, ‡	///	ł	
t		: ,	1	11	ſ	1		1	
t		HIT	1/1	V	1	+	-41	1	
ł	silty Sand - orange brown, yellow/		'		}	ł	1 /	}	
F	brown, fine grain, trace			I	į	Ŧ	$\{\}$	1	
F	Clay, with rod oxidization				1	7	1//	1	
ţ	+ spherical) inclussions, damp,	1 / 1 / 1	//	11	}	‡	1	ì	
<u>t</u> _	inclusions, clamp,	- 1-	1		ł		1 1	}	
+	loose-moderately dense (sm)	1. []		11	1	1		1	
	, , , , , , , , , , , , , , , , , , , ,	1:111	1	1/	}	• }	1	}	
1_		- - -	الر.ا	11	}	J	77	}	
			i l	1	I		1	j .	

ROJECT NO. 32238 B

SHEET___OF_3

	•						
	•	Λ .	1. 11	1		HOLE NO.	36-188
ward-Clyde Consultants PROJECT NAM	e Rm	1-10	SK	<u> </u>			
ward-Clyde Consultants	GRAPH	10 106	: = } ;	1 1	2-3-	REMAR	eS Hoss, Odor, e1c)
	Clipopodi	pic some for the spligt for	\$ E & S	1 1 1	\$ 10 mg (Drill Rate, Fluid	
DESCRIPTION	$\frac{1}{1}$	157	-	17			
2	1111	111	1 1	‡	1		
<i>†</i>	\mathbb{H}	47Y		III	1 1		1
<u> </u>	1/1/	NN	1	# 11	1 1		
‡	11:11	1/1/	1 1	#-1			
= silty sand -as above	11:1-1	. Y / Y	1 1	11 /	1		
‡ "		: [-1];	4	11/#			
1			4 1	‡ V 1			1
<u> </u>		•	1 1:	Ŧ1		}	•
Forther Son Languard house authorist	. <u> </u>	1 1.1	:1 1	‡			1
t silty Sand-arangish brown yellowish	` }	11.11		+11		1	
tine to lower medium grain sand	- 111.	11:1		‡]	$\parallel \parallel$		
I clasts, mod dense to loose,	111	1.1:1	$\left \cdot \right $		$\ \ $		
, damp (sm)			;	1 #	$\{\}$		
1			1.1	1 1	-		1
Fsilty Sand as above grade	, [[]		1:1	# 1	11		
to asandy silt in part			1:1	1 1	}}}		
[5m-mL)].}-[:]		1 \$	111	}	1
1	1	}} }!		1 #	////	}	
+ clayey Silt dark yellowish brow	n. V	///:		1 +	V I I		
t with tan hard clay inclusion damp-moist, firm (mL)	7) V	// \E		1 =	$\Lambda \Pi$	1	
} damp-moist, firm (mL)	1			1 ‡	M		
\	ľ	///:	1-1-1	1	-111	1	
-				_\	-	1	
1		<i>[</i>				The	sample from
1-		{:			111/	1	ILA SOMPRI
I No Sample			-	-	IIIF	by +	he shock to the
+	1	1	11-1-1	1	‡\	20-	ple from 15.5'-
<u>‡</u>		1	制.1	. -	[18	
<u>‡</u> '	1		·:[<u>-</u>]:1		‡ \ \ \ '		<u>.</u>],
1			. [-]		Ŧ///	Free	e water encountered
·			= :	1 1	₹/\\	@ 1	m bottom of
‡			1/1		# 1	Sai	mpler.
· -			门		# 1		
‡			1 : [-];		+		
and gellowish brown, very fin	e		1.1.1		1) /F		1
fine grain, trace sett to son		1:	1:11:11			<u></u>	SHEET 2 OF 3
							Jurr,
722281							

	GRAPH	C LOG	. =	2	5	7	પ દક	
DESCRIPTION	Filhology	Ple surne ter Ine to liet to	Conte	Ple game her Date	Typ: M2	Roco. C	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	REMARKS (Orill Rate, Fluid lass, Odor, etc)
. (1+, wet, 100 se. (SP)		White the state of		1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			7. 0 AB6	
silty Sand y ellowish brown, very fine. fine grain, with trace clay as red inclusions (veins a clasts), wet, locisce (sm) ayey silt-grayish brown with reddish brown cloyey inclusions, trace fine gravel, damp- dry, mod dense-clense ring terminated at 23.5'							7.5 pie	

xdward-Chyde Consultants PROJECT N	IAME R	ocks	Mu	nto	<u>a Ac</u>	SAC	<u>a /</u>	Task	1 HOLE NO.36-189
16 LOCATION Sec 36-17					4 44				
ING AGENCY DATUM Exploration Ing DRILLER PULL	. Acta				RIED	4	(د/	8/49	15/2/89
INC IPMENT CINE 250	3 141 5 41				IOH (EPTI	1 /	125	SAMPLER B
	1600 cm	ttec		10. 0	F	DIST		<u> </u>	UNDIST.
AND TYPE OF CASING 4" Schoolale 40 PVC	28 0014		W	ATE	•	FIRS	T		COMPL. 24 HRS.
OF PERFORATION . O(0" (NC.10) Statted FROM 11	1021	FT.		GED		. /)		CHECKED BY
AND TYPE OF PACK Colorado PO - FROM 8.0	10 12.	∠ F ₹.	1) 	Yh	IJ	0-4	? ~	
OF SEAL Beatonite Pollets FROM 3.5		FT	1	•	,				
OF SEAL Beatonite Pellets FROM 3.5		HIC LO	×		•	\$4	<u></u>	LES	
DESCRIPTION .	Lithology		nueler letion	No.	Pietom e Date	Type No.	Recor, 16	Penetra Restat. 18 bys./ 6 In.)	REMARKS (Drill Rate, Fluid tass, Odor, etc.)
Sand - tan, yellow/brown, fine -		N	N						Drillers and
+ very fine grain, subrounded, trace	· ·	N	N			W		}	Geologists in
silt and clay, dry, loose	1	\mathbb{N}		1.4	, +	.49		ł	Respirators/compin-
(mL)	11/1	M	N	br		-18	1.7	ناز	swi air
clayer Sand-tan, yellow/brown,	11.7	N	N			-4	1	 	HNY B.C.O - 0.7 ppm
fine-very fine grain, moist,	1//	M	N		:	: / \			HNureading 15Uppm
10026 (SC)	1//	N	N]		1	M43, Droger 1 mis
	ITT	N	N		-	4-		1	readings 0
clayer silty Sand-tan, yellow/bicon			N			1 /		1	
t very fine fine grain, dry, lonce.	11-:1-1	N]	11			
The dens -	11-11-	N		J.		W	1	{	
(sc-sm)			1/4	NB		- h	9	ناج	
-	11.1.1	N			٦	-//	ľ	0	
<u></u>	111.1	N	1, 1			://	ļ	1	
<u>-</u>	1111.		N		-				
<u> </u>	111.1.				1		1	Ì	
<u>+</u>		W						}]
•		1	1		-				
<u> </u>		Y/I	V						
<u>.</u>		1/1				1	L	-	
silty Sand-as above		V_{λ}	17			X /		Ì	
occasionally grades to a clayer	11-1-1	I	V			:\/	l		
= silt (sm)	11.1	ľA			7	-\	١.	v	
	- '		Y)		1	:/Y	'n	1. is	
-	1111	IA	V		_1	4 1	ľ	•	
-		1/	1/		[]	1 1	1		
- 	11 1	I			1				114
silty Sand-yellow/linoway fine grain,	$\parallel \parallel \parallel$	/	1/				Γ		HNU reading
" TIUCE Clay, with ecc block with	11.11	'	$ \cdot $		1	1 /			5 ppm
	- -	1/1	\mathcal{M}			1/		0.6	
loose (sm)	H + V					-		ABL	
(4.7)	11-1-1				1	·V		ľ	
sandy Silt-yellow/brown, with	V.//	1 1	11]	-k			
accasional fine to very fine	1//	∤/]	:/\			
_	1///	1/			رً ا	<u>/</u> \		}	
		1	Y					}	
		است	ب-		ч		_	·	<u> </u>

odward-Clyde Consultants PROJECT N	IAME R	മ്പ	<u>A</u> _	To	sk	2			HOLE NO.	<u>36-18</u>
IG LOCATION Sec 36-17				VATIO		DA	104			
	y Part		DATE	E 514	SHED	41	12 3	189 /		
IN IPMENT CM E 750	1.1511.	×1	COM	PLET	ION C	EPTI	H 2	12.5	SAMPLER	
ING METHOD Hollow stem Auger DAILL BIT 6	(CO)	ulter.		NO. O	F	0151		.4.0	UNDIST. 9	
AND TYPE OF CASING 4" Schedule PVC	71.0.7.	***	V	VATE P	1	FIRS	Ť		COMEC 54 1	IRS.
OF PERFORATION, 010" (NO.10) Slottel FROM 11	10 0 /	Fī.	106	CED	BY	1			CHECKED BY	
AND TYPE OF PACK Colorado #10- 720 FROM 8.0		FT.	Ba	الع	W	سدا	٣.			
OF SEAL Bentunite Pellets FROM 3.5	° 8.0	FT								
Demonie Tenera 1 10	GRAPH	ic Lo	×		2	5/	мР	LES		
DESCRIPTION	Lithology	Pleso tretal	meter lation	Weter	Pleton Dote	Type Ma	A.cov.ft	Penetra Resist. (Bows/ 6 In)	REMARKS (Orlit Rate, Fluid lass,	Odor, etc.
sand grains, trace cloy,	177	1				-71	Γ			
[(mL)	Y / /I				7	-	l			
	 				-	71	1		}	
silty sand - as above	11 11	A			1	71				
= (Sm)	17 11		4		1	1	}		HNU reading	\cap
	1-1.1.11				1	1	1		111074 . 2001	
•	11.17	$ \cdot $				-\ /	1	}		
<u>.</u>	11-1-13	$\cdot \mid$			-	-\	1			
	1 1 1 1		ا - ا			: Y	}			
- Silty clay-gellow/brown, orangel		$\cdot \cdot $	$ \cdot $		1	- 1				
the standard of the standard of the standard					7	-//				
brown, trace very fine grain sand,		.			1	-/}				
. (CL) time grain sund,		1	١,		1	7 \				
3			ر ا		1	-)]	
					1				Free water	c 60
clayey Silt - yellow /bicion, with		1	'		7	T 1			101	C
occasional fine grain sand, wet	[//]	:	1		1	}			'	
firm	// /I	I	•		1					
firm (ML)		1			1	1]			
" .	[/ /				1	\ /	1			
	/ /	- إ			7	-\/				
	//	-			1	: //:				
	/ /	`\-			4	_1	1			
	/ /		.		‡					
	/ /	. -	-		‡					
			$ \cdot $	1	7	7()				
cloyer silt - as above, with		. [-]	-		‡					
Jegsill-as above, with			-		‡	1 /				
firm-stiff (mL)		-/	-		‡	1 1				
TIVM-STILL (ML)		· -	-		‡					
	[//]	1			4		1		1.	
		. [-]		1	‡	\ /				
	54				#	-\				
silty clayey Gravel - yellow brown,	0		:		‡	Λ				
ay, occusional tan silt inclussions]	‡	$/\setminus$				
		-	-	}	_1	- Y				
	~ @	`. {-		}						

ard-Clyde Consultants PR	OJECT N	ame I	m	97	35	k 2		HOLE NO. 36-187
TATION Sec 36-17			L	LEVATA				
	DHILLERRLLS	& Park	er 0	TE FOR			28/89	5/3/89 - TSAMPLER
CME 750	DRILL BIT		l_	OMPLE!		DIST	<u> ≺~'7</u>	UNDIST. C
THOO Hollow Stem Auger	Dice sur	% OD 'X	-4	NO. SAMPL		FIRS		COMPL. 24 HRS.
1 .2C NOTICE	FROM	1021	FTL	ELE.			· <u>. </u>	CHECKED BY
	FROM S.O	10 22.5	FT.	30b	W	ilso	'n	
Bentonite Pellets	FROM 3.5	10 8.0	FT					
DESCRIPTION		GRAPH Elthology	Platoma trafellati		Pieton ete	9	Penetra 16	REMARKS (Orill Rain, Fluid loss, Odor, asc.)
ime-medium grain sand, we noddense-dense (Gm-GC) Ity clayer gravel - as (Gm-GC) open gravel grades to a le occasionally ey s: Ity gravel- as about (m-GC) velly Clay-yellow/brown ange/brown, with trace set if irm. stiff (CH) clay-yellow/brown, or stiff-hard, damp-medium (CL)	gravelly n, rod, ilt,						€	weattempted a 4.5' fun with the sampler from 15.5' to 20 and got a very poor sample ~ 75% recovery

vard-Clyde Consultants 🤀 P	ROJECT N	IAME S	<u>m</u>	A_	<u>7</u>	20	12			HOL	E NO	36-189
LOCATION Sec. 36-12					VAT IO	N AN	O DAT	U4				
AGENCY Datum Exploration Inc	DRILLER RU	ss Pack	er_			SHED		4/	8/80		1/89	
ET WENT CME 750							DEPTH			SAMPLER		
- 10 Hollow Stem Auger	DAILL BIT	そつりい	tter	SA	10. 0 MPL E	5	DIST			UHDIST.	9	
TYPE OF CASING 4" Schedule	PVC			, w	ELEV.	₹ 	FIRS	 		COMPL	<u> </u>	HRS.
PERFORATION . OIO" (No.10) Slotted	FROM /	10 21	FT.	,	GED					CHECKED I	BY	}
TYPE OF PACK Colorado #10- #20	FROM 8.0			الا	00	Wil	50 m	١				. [
SEAL Bentonite Pellets	FROM 3.5	0.8 0	FT	Ĺ,								
DESCRIPTION .		CRAPH	Please	raeter lation	Weter	Plezon ete Date		Recor A.		(Orlit Rase,	EMARK Fuid to t	S is, Odor, elc.)
silty clay- as above												
1							-					
NO. 22238B										SHEE	T_4	_OF_4

	^	BLG SAMPLE		_
dward-Clyde Consultants 🕪 PROJECT N	AME Rock	Mountain A 120	ney Tas	k2HOLE NO. 36-190
IG LOCATION Sec 36-17		1	TUM	
ING AGENCY Datum Exploration, Inc DAILLER RUS	s Parker	DATE FINISHED	117187	4/26/89
UIPMENT CMETI (T)		COMPLETION DEPT	<u> </u>	SAMPLER Bob Wilson
ind WETHOD Hollow Stem Auger DRILL BITG	5/8 OD Land	NO. OF UIS		UHDIST.
and the or casing 4" PVC (Schedule 40)			7.5	COMPL 6.8 124 HRS.
of PERFORATION ,010" (NgIO) Slotted FROM 8,25	5 to 18.25 t	Bob Wils	00	CHECKED BY
AND TYPE OF PACK Colorado No. 10 FROM 6.5	10 DO. ET.	1 1200 WILL	· / /	
of SEAL Bentanite Pellets FROM 3.0		<u> </u>		
DESCRIPTION	Lilhology Plaze		Peretra Peretr	REMARKS (Drill Rate, Fluid love, Oder, etc.)
	 	7	 	Drill crew ,
<u> </u>	1 . N	N + 1	11	geologist, health
‡	' :	N 1 #	11	and so lety tech
‡	'·· \	11 1 11	{ }	In respirations
 	1: ', []	M + M		compressed air
 -	. · N	11 1 #1	11	HNu background
	1 . · . Kl	N + H	11	reading 0.4-
E Sand - tan to brown, fine grained,	1		H I	0.5 ppm prior
medium to well sorted, loose,		/ + /	1	todrilling
dry (sp)	· · ; []	 		1
- 3 (-	· 、	11 1 1	11	
	: '. \	$N \mid \downarrow \downarrow$	11	
	· · · \	N 1 +1	11	
	l \\		11	
	[` , [}	NE 1 (A	11	
	- /	T		
	.··/	$ Y + \exists V $		
<u>.</u>	1.3.6	$ \mathcal{A} \mathcal{H} $]]	
	1		V	
- very silty Clay-firm, brown,		I]	
		\mathbb{T}	11	
with some fine grain sand, low plasticity (CL)		M I N	1	
- 10m pigs 1101. 3 (0-5)		 		
		Y { { X	11	
	/	$\Pi = \Pi $		
•		[V 1	1
		#	11	
- -		11/1	11	
	171.I'Y		11	
silty Sand yellow, yellow biccon,	11.11.1/		11	HNH reading 0
fine grain, very loose, dry		{	11	1
(A) (SM)		1 1 ‡	11	
! -	11 1	1		-
1+ 6.8' soil becomes moist	14.1:1.1.		V 1	<u></u>
E. T. G.O SOLL STANKE MOIST	1111.1.		11	
	111.11.			
·		<u> </u>	ــــــــــــــــــــــــــــــــــــــ	<u></u>

DECT NO. 22238B

SHEET 1 OF 3

Description Descr	Ison rs.
MG EQUIPMENT CME 750 MG EQUIPMENT CME 750 METHOD Hollow Stem Auger ORILL BIT 68 CD C-1-1-1 SAMPLES POINT. QUITE FIRST OF PACK COLORADO NO PROPERTION OF PACK COLORADO NO PROPERTION DESCRIPTION DESC	RS.
THE PERFORATION AND STATE PERFORMS TO SEAL BENTON TO THE OF PACK Colorado Nobo FROM S. TO 20 FT. Bob Wilson DESCRIPTION D	RS.
DESCRIPTION DESCR	RS.
FRENERATION, 0/0" (Volo) slatter FROM 8.25 TO 18.35 FT. LOGGED BY ID TYPE OF PACK Colorado Nolo FROM 6.5 TO 2.0 FT. DESCRIPTION DESC	
PERFORATION OID (Wald) Slatted FROM 8.25 TO 18.35 FT. LOGGED BY 10 TYPE OF PACK Colorada Nalo FROM 6.5 TO 2.0 FT. DESCRIPTION DESCRI	
SEAL Bentonite Pellets DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION LINDINGY Plazameter installation Plazameter installation REMARKS REMARKS LINDINGY Plazameter installation REMARKS REMAR	
Very Silty Sand-yellow, yellow brown, fine grain, occasionally Silt, with red and black Silt inclussions to all Sententic LOG GRAPHIC LOG Plazonator Plazonato	
DESCRIPTION Lithology Plazonator Page Samples REMARKS	
very Silty Sand-yellow, yellow brown, fine grain, occasionally grading to slightly cloyey Silt, with red and black Silt inclusions that	
very Silty Sand-yellow, yellow brown, fine grain, occasionally grading to slightly cloyey Silt, with red and black Silt inclusions that	Odor, elc
Silt inclusions that	
Silt inclussions until	
Silt, with red and black Silt inclussions that	g
Silt, with red and black Silt inclussions that	
Silt inclussions that	
7 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
$ \cdot \cdot \cdot \cdot $	
[4'1'] [-].', [
1.0 Add	
very silty sand-orange, yellow HNA readin	rq
Grange, time grain with	J
2000 310 NOT 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
2 """ 10 Q Z0WV" C:11 + " + "	
mod loose-poorly can noted	2.1
mod loose-poorly comported. The hole was overdrilled a	.44
a wager of	י (ק
Completion de	ጎታፕሮሶ ኤሌኒነ
was reached	pth
The Puc can	Since
was then set	,
	o"
· . · ··	
very silty Sand-orange, yellow the HNA Reading	^
orange, fine grain, with red the bock grain	U
J-7 M STOURS WITH COLL 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	und
σ· '''(1835,0ΑΣ,Τσο/φ Ψέλο	
gray gravel	
Gly gravelly sand as above	
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IE T NO. 22238B

SHEET 3 OF 3

	dward-Clyde Consultants 🕪 PROJECT 1	NAME 77	∞ \mathbf{k}	Mou	nTq:	للم	u	ennalle	12HOLE NO. 36-19
JOORIN	6 LOCATION Sec 36-17				IOH AH		TUN		
	ing agency Datum Explication Inc DHILLER.			DATE S	NISHEO		78	187	5/11/87
<u> </u>	NG EQUIPMENT C.ME D.CO	71: 4±12		COMPLE		DEPT		0'	3 OD SUR ISMA - 1. VOCA
	MG METHOD Hallow Stem Auger C-15-01)	Head		NO.	.ES	DIS			UNDIST. /6
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		7 7/7	FT.	$\overline{}$	bu	11.			
TYPE	of SEAL Benton: to Pellets FROM 16		- 1	//C	, U W	(12)	ייי	•	
	of SEAL Benton: to Pellets FROM 16	10 2 /. 7	UC 10	. 1	1.	<u> </u>	MP	LES	
OCFTH FCCT)	DESCRIPTION	Lithology	Player	anter Historia	P. 8	Type Ne	Records	Ponette Resist (Seve) 6 In)	REMARKS (Orlit Rate, Fluid 1000, Oder, etc.
, , , , , , , , , , , , , , , , , , ,	sitty Sand-yellowish brown, very fine to accessionally fine grain; with roots, dry; loose (or-sm) sitty Sand-ac above without roots (Sm) sitty Sand-yellowish brown, fine- very fine grain, sah rounded, accasional roots, dry, loose (ML-Sm) sitty Sand-yellowish brown, very fine to accessional fine grain, subrounded, loose to mod donse when sitt content increases slightly, dry (ML-Sm)		17/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/						Drillers & Geologist in level C/B Protective Clothing Protective Clothing HNM readings background (0.2 ppm) unless noted. The boring was overchrilled with a 10" auger (105% cutter head) after the 6" augers were removed. The monitoring well was then installed through the 10" augers.

PROJECT NO. 2223813

SHEET_1_OF_S

	DESCRIPTION	Linkshogs	Plantone for Inchesios for	Conton	100	Retor, fr	Bales Bone	#EMARKS {Oriti Rate, Fluid tess, Odor, e
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‡		\///	111	11	#			
I silt	y Soind-orangish brown, you own, very fine grain, gra a sandy silt in part, dry	ellowish ///	11	1 1	T.	Ì		
1 pro	own, very fine grain, sia	des ///	M	11	#	\mathbb{N}		
I (o	1112020 MMIR - 520	V/	11	1 1	‡	VI	1	
‡	(mL)	//	H	11	Ŧ	1		
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1			M	H		ŧχ		
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<u>n</u> ‡			[[]	H]		
<u> </u>		1/	$/\mathbb{N}$	17		#	$\parallel \parallel$	
<u> </u>				H		#		
13 + 5;	Ity Sad-gellowish brown, u	acution /		H		A	711	
‡ 3	rain, trace tan hord clo inclussions (prohable volconi	y //		17		#	$\parallel \parallel \parallel$	}
Ŧ '	laose (ML)	(2),9(4)				‡	111	{
14 +	•	1/		11		Ŧ	111	
1	•	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\		17		‡	M1	
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15 = 5	ilty Sand-as above	Y,	$//\!\!\! \setminus$	M		T	71	
1	•	\	/ /	M		‡	$\{\{\}\}$	
1 +		1/	$/\Lambda$	N N		7	XI	

	ward-Chyde Consultants of PROJECT NAME	GRAPHI	c roe		?	7 12	4.4	m(MARKS
(June 1)	DESCRIPTION	Fillpoladi	Pigassparter toping in	a de la companya de l	200	1 1 1 1		(DrIH Mele,	Fluid less, Oder, etc
4		1//	177			\prod		16.3 1	lenver forma
1	Clay (volconic ash) ton with		YXY	1	-	H		tion	10/
1	reddish brown, green, and black		YXV	1					
7‡	Inclussions, dry, film - stiff (CL)		1/1/	1		F7			
'‡	sandy Silt - orangeish brown, reddish brown,	Y//	XX	\langle] -				
+	reddish brown, reddish orange, fine to occasional nedium grain	Y//	V: V	1		11 /\$			
‡	Sand, trace fine gravel, dry, firm to soft (ml)	Y//	W	1	-	‡ }//		1	•
を主		Y/	W.I			‡ X I			
<u>‡</u>	at 17.5" tan clasts occur	Y/	1/1Y		'	‡ /\		1	
$\frac{1}{4}$		V/	WH			払			
19]	- as above trace moisture	Y/	M	4		1/			
	with associated organic matter	1/	111	1		ŧ٧			
7	roots, dense-mod densa	Y/	XX	Λ		#1	$\ \cdot\ $		
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	sandy Silt-as above			1		T		-	
	(m ^L)	V_{I}		1)		#			
21-	‡	1/				#	$\ \ $		
	sandy S: It - varicular ad (well ox -	1/	M	N		#	M	- {	
] .	idized) trace roots, with red-	. //	\mathcal{M}	V		Ŧ\			
22.	I dish very fine to fine grain			И		1	\mathbb{N}		
1	sand clasts, dry, mod donse		1	1.		#			
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33						<i>[</i> ‡	.///		
1	fine gravel	/	1.	:		IŦ	W 1		
1	gravely silt- silty Gravel-yellow	rish 6					V		
12	A promy , and) tive area! was its	nse	//:	1:		1	111		
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1	st clay-groyish brown, dark grownishs	194	1	H	1_	لــــل			SHEET 3

7.0		CHAPH		. 9	٤	- 5	E	n.es	#FMARK4
SECTION AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF T	DESCRIPTION	Listology	Pleasere for Inchaile ha	S S	100	1	Prior.	1 1 2 1	(Orth Adu, Fluid loss, Odor, etc
	with reddish brown and brown axidized veins; dry, hard dense								This claystone
G T	Shale-grayish brown togreenish gray i occasional brown vuy Fillings, interbolded with yellowish orange siltstone, dry, hord.				****************				is really a weath- ered shales
)	shale as above, troca moisture		Indugar carear						
19 -	Shale-greenishgroy to groyish brown, with yellowish brown interbedded siltstone, dry, hard								HNjireuding 291 Guer background
33-	Shale as above		the transmination of the						
33					1				SHEET 4_OF

		GRAPH		٠ ۽	3 3	TE I	7.53	2541.075
165	DESCRIPTION	FillpolodA	Pleastre for me lei lei lar	al neg	Phi sperior	Aeco.	8 8 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	NE MANKS (Drill Role, Fluid lass, Odor, etc)
34- 34-	Shale-grayish brown to greenish gray, accasional banded with dark gray brown shale and yellowish brown silt, dry, hard	11111111111	unin amonamia					
36								·
37	shale as above							No water was dotacted in the hole while drilling 16 hours after
39	shale-gray, grayish hrown, with interhedded yollow arange silt, hard, dry							drilling 1.8 of water was detected in the hole. After overdrilling a water check indicated the hole was dry again
40-	Baring terminated at 40.0'		//					
					+++++++++++++++++++++++++++++++++++++++			
	ECT NO							SHEET SOF S

ELING WETHOR Holl Stephase READ TYPE OF CASHON DESCRIPTION DESCRIPT	finedward-Clyde Consultants 6	ON IECT N	AUE Pock	mount	gia Accua	/ Tast	7 HOLE NO 36-107
a control of the politics Tree production of the politics of t	TING LOCATION Soction 36-12	100ECT 14	WAIC DESC				
ELING WITTER CONTROL LAND THE OF CASING AND THE OF CASING BESCHIPTON BESCHIPTON CHARACTER AND THE OF CASING BESCHIPTON CHARACTER BESCHIPTON CHARACTER AND THE OF CASING BESCHIPTON CHARACTER CHARACTE	NG AGENCY DAL COLA TO	DRILLER	0.	DATE ST	ARTED 5	15/89/	77.60
and throughout stop Age and through thro	DAILLING EQUIPMENT COS DEC	IICn	g Konciguez	COMPLE	TION DEPT	ا این رق	SAUPLER WI poly tomte
THE OF PERFORATION NO Motors Softhal Production of the Community of Motors Softhal Production of the Community of Motors Softhal Production of the Community of Motors of the Community of Motors of the Community of Motors of the Community of the	FLING METHOD U II CO O	DRILL BIT	C. free	HO.	OF DIS		3 OU Splispoca lines
The presentation of the probability of the probabil	E AND TYPE OF CASING			WATE	R FIR	51	COMPL 24 HRS.
is and twee or reac Colored Abold - 200 From 45 to Servi Dave Basto The or state Buntonite Pelluts From 40 to 45 to Servi Dave Basto Occurrence Dave Basto Occurrence Lithway Pelluta Pelluta Construct Colored Basto Occurrence Lithway Pelluta Fronts, damp, loase (oc) Clayer Silt-dark brown, with tan silty inclusions, fine-very fine grain, dry, loase-mod derice (Sm) 41 QS above Silty cand-medium yellowish brown, with occasional tan silty inclusions, (prabelite velcanic ash), dry, nod dense-loase (Sm-mt)	7 (Al) Detedule			LOGGEO	67		CHECKED BY
DESCRIPTION DESCR	LE AND TYPE OF PACK TO A SIGNATURE	37.3		Bob	wilson		
Sands Silt-black, dark brown, with roots, damp, loose (ot) clayer Silt-bark brown, trace roots, damp, soft-fire (mt) silty Sand-light yellowish brown, with tan silty inclusions, fine-very finegrain, dry, loose-mod dense (Sm) 41 QS above silty Cand-modium yellowish brown, with accasional tan silty inclusions, (probable velcenic ash), dry, mod dense-loose (Sm-mt)	TYPE OF SEAL O	150011		Dow	Raf		
Sands Silt-black, dark brown, with roots, damp, loose (ot) clayer Silt-bark brown, trace roots, damp, soft-fire (mt) silty Sand-light yellowish brown, with tan silty inclusions, fine-very finegrain, dry, loose-mod dense (Sm) 41 QS above silty Cand-modium yellowish brown, with accasional tan silty inclusions, (probable velcenic ash), dry, mod dense-loose (Sm-mt)	Bentonite Pellets	40		<u></u>			
sandy Silt- dark brown, with roots, damp, loose (at) Clayey Silt- dark brown, trace roots, damp, soft-fire (ml) silty Sand-light yellowish brown, with tan silty inclusions, fine-very finegrain, dry, loose-med device (sm) 41 as above Silty Cand-medium yellowish brown, with accasional tan silty inclusions, (probable volcanic ash), dry, mod dense-loose (sm-ml)	· 😭				! £ }		REMARKS (Drill Rate, Fuid loss, Odor, etc.)
30JECT NO 22238B SHEET / OF 8	clayey Silt-dark brown, tra roots, damp, soft-firm (mL) silty Sand-light yellowish brow tan silty inclusions, fine- finegrain, dry, loose-mod (Sm) 41 QS above	n, with very dense					trade
STATE OF THE PROPERTY OF THE CONTROL	30 FCT NO 322 3 8 B			,			SHEET 1 OF 8

		GRAPH	ic roe	-1	<u>;</u>	54	PLE	5	
ے ت	DESCRIPTION	Lithology	Piezometer Installeriza	S S S	100	1,191 30	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	80 - 10 -	#EbiaRetS {Ortit Role, Fluid toss,Odor,etc}
S S S S S S S S S S S S S S S S S S S	clay (volcanic ash) - tan, with green and black mineral inclussions, dry; stiff (CL) Shale-very weathered, brown to dock his								
تارىرى (مىرىلىرىرى) ئې	Shale - medium brown to dark brown, with reddish brown silty veins - clasts, dry, hard, blocky, crumbly luce on the								true -
A	Shale - brown to greyish brown, occasional layered with greenish gray shale, dry, hard, blocky, crumbly (very weathered) Shale Gs above								·
:OJ€	CT NO. <u>322 3 8 B</u>				1	_			SHEET 2 OF B

		GRAPHI			ž.	5 13	PLES	REWARKS
·-	DESCRIPTION	Listatogy	Pianemeter has tolder ter	Pole	Eå	2	1 2 2 3	REMARKS Equilit Mate, Fluid Tosa, Odor, atc
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⁻ ‡	Shale - brown to grayish brown,	1		}	1	;	1	1
t	with greenish gray banded layers,	\		•	1 -	L I	1	
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1	Shale as above with trace		-14 1		}	Ŧ		
1	reddish orange to reddish brown		11 1	1	1	Ŧ	} }	11
1	stainning in healed fractures, occasional reddishorang siltstone		-		1	‡	11	
t	occasional reddishorang siltstora				Ì	‡	11	1 1
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. ‡	Shale - brown, with block inclussion	'3/			1	Ŧ	11	}
	hardsdry, crumbly.		-		1	T	11	
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` 1	Shale-dark to modium brown, with	 -	-		1	Ŧ	11	
. 1	some interbedded yellow brown	}		11	1	1		1 1
	siltstone, dry, hard, crumbly	\		1.1	- {	‡	11	} }
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	I shaley siltstone dock yellowish	1 -	- 11	111	- 1	1	{ {	11
•	- brown, with some brown		`			1		
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ROJECT NO. 2223813

SHEET 4 OF 8

	PROJECT NAME		IC LOG			34	4.5	LES	HOLE NO. 20172
瑟	DESCRIPTION	Lithology	Plezometer Installation	nter	6 5	£		# = # E	REMARKS (Drill Role, Fluid loss, Odor,etc)
\$ ~ 1		"	treated led for	* 8	3	1,00	3	2 8 6 -	(Ortil Rate, Fluid loss, Odor, etc)
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ROJE	CT NO. 22238 B								SHEET 5 OF 8

Yoodward-Clyde Consultants	PROJECT NAME RWIT	T21k2	_HOLE NO. 36192
DESCRIPTION	GRAPHIC LOG Lithology Pleasure installed	To the property of the propert	REWARKS (Driff Role, Fluid loss, Odor, etc.)
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ROJECT NO. 222388	<u></u>		SHEET LOF E

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	DESCRIPTION	Fithology	Piezome Inetalia	100 mm	60	Type Ma.	3 2	200 S	REMARKS (Drill Role, Fluid loss, Odor
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SHEET B OF 8

The control of the co	Woo	dward-Clyde Consultants PROJECT	NAME	R	MA	+	25K	2		HOLE M	10. 36.19	3
The active Date on Explanation Ixx [078,16] hellingar Control String String 3-1-97 The active without helling steen dangar [078,16] hellingar control string 19.0 [188,16] 3-1-97 The active or came of a school let 40 PVC THE active or came of a school let 40 PVC THE ACTIVE OF THE ACTIVE OF STRINGS AND					ELEV	40174	400	ATUI	1			
COUNTING CONTROL OF STATE OF S	1 2	NG AGENCY Datum Exploration Inx ORGUER H	المرود		DATE	STA!	HED S	-10	0-89	15-17	-88	
THE OF VERTICAL OF SCHOOL OF STEW OF THE OFFICE OF THE OFF	4	NG EQUIPMENT CIME 55	- <i>U</i>					<u> </u>	7.0'	3 00. W/A	it butyonte in	467
THE OF THE PROPERTY OF CAPTURE THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF CAPTURE	- ARL	no hethor Hollow stem anger pails git	5/8" he	*						i		
THE WOUND THE CANADA FLOWERS FROM O 3.5 THOUGHT STATE OF	128	the type of casing 4" schedule 40 PVC			E	LEV.		45 1			24 HRS.	
THE OF SEAR Bounder of personal states in the control of the contr	1 22	010" (N. 10) Slotted 1900 6.		<u> </u>				E		CHECKED BY		
Baytonite Ballets O SERVICE COM CHANGE TO THE SERVICE OF COMMENTS DESCRIPTION THEN THE SERVICE OF COMMENTS DESCRIPTION THE SERVICE OF COMMENTS DESCRIPTION THE SERVICE OF COMMENTS THE SERV	- 122	SANDY Christo #10-#25			i							
Situry Carly, Firm-birth, pro-philiting organics, during the state of	<u> </u>	Bartonite pellets 100		لسيي								
Sirry carry, time 15.10 plants, organic, and services and services are serviced. The services of services are serviced. The services of services are services are services. Coher changes to rester yellowish burrons (to ye 5/4 munsell), no roots Some banses of grayish-overage (to ye 7/4 munsell) siltry shall.	E	000000000000000000000000000000000000000		T	— 7.	3				REMA	aks	
Sirry School, loose, Kne grained, such states of grant of the service of substantial subst	, 55	Seather than			ation	8	28		1	(Orlli Rem, Fluid	toos, Odor, etc.)	
Sixty Salus, lose, Rine grains, with sorted, subsequency days yellowish-brown (to ye the municity), (5m), work, roots Cater changes to molecule yellowish- brown (to ye 5/4 municity), no roots Some lenses of grayish-orange [10 ye 7/4 municity) sixty SANA	 	FILTY CLAY, firm - Hitty law-plastice, organic,	23337	坏	7	7	-+:	된			,.	
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	= 0	1ECT NO. 22238B								SHEET	1 OF 3	_

_	PROJECT NAME		I	,					HOLE NO. 201-2
ŧΞ	,	GRAPH		: 3	ļ.			_	. REMARKS
	DESCRIPTION	Lithology	Mesoneter too tellerite	3 8	Pto 155%	1,1	9 5		(Dritt Rate, Fluid less, Odor, etc)
.1				1		E	4		
16-	- SILTY SAND, loose, fine-quarted, well- Sorted, subangular, gargish-brown - (Syre 3/2 munsell), very wet (Sm) with lenses of pole overge (10 yr 8/2 mm.), SILTY CLAY which are 2"-3" thick				‡	-	1		
	Sortel , Subangular, anyish -brown	1.1.4.			‡	1	1		
	- (5yx 3/2 munsell) were (5m) with			1	‡	_	1		
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1 1	CLAYSTONE, hand, ansky brown (5 YR		ار م مومع		‡	: }			
1 1	claystone, hand, dusky brown (5 yr. 2/2 mmsell)		4		‡				
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22238B F OJECT NO. ___

SHEET 3 of 3

tward-Clyde Consultants PROJECT N	IAME _	RN	A	tas	1:	2		_HOLE NO. 361
E LOKATIONS GESTION 31			CLEVATI	0 N AM	O OAT	Ü		
	Hilling		DATE ST		1.4	,	15-	89/6-16-89
CUIPMENT CIME SS / 6" hollow Stee		K'C	COMPLE	TION	DEPTH	7	8.01	SAUPLEN POTALITYONE
ing nethod hellow Stein rugers phill oith	5/8" chi	153	NO. SAUPL	OF ES	DIS1.			UNDIST. 3
10 2000 00 000000 400	JC.		WATE		FINS	¹/L	0.8'	COMPL. 24 1145.
F PERFORATION #10 Slotted FROM 23.0	10/4.	L FT.	LOGGED	E Y				CHECKED BY
THE OF PACE TO Color to sound FROM 28.0	109.0	5 61.		<u> </u>				
F SEAL bentinite pellets 1500 9.0		FT	MOR	Z, S	SE	17	E	
1	GRAPI	110 100		1	SA	MP	LES	
DESCRIPTION .	Flippeda	Pieson tratale		10 00 00 00 00 00 00 00 00 00 00 00 00 0	Type Ma	Rocor, St.	Section 1	REMARKS (Orill Raio, Fluid toss, Odor, etc.
+ SILTY SAND, luse, fine-grainel, well	जिल्लान-	Г Т						NOTE: UPIL REALUGITHE
t sortell, subanguler, dark yellowish -	HH	[]	17	1 1	polybatynate			HOLE WITH THE IS"
brown (10 yr 492 munsell), slightly wet (5m), with voots		17	Ν		दे	Н		AUGRES AN AFTICUTEY SHELL (SPENT) WAS BRAG
wer (Sim), with voots		Γ	Ν	1 1	3	1		TO THE SURFACE PENT
very light group (NB), with the consistency of	4:1:1:	N.	N	1 1	3,			A DEPTH OF 2"3".
sitty along (concrete dust?)	[N 3	1 / 1		- "	H		cement/
SILTY SAND, love, fine-graned gwell-	1:1:1:1.	N 3	N	1 1				- bentraite
sorted, subangular, moderate gelbuist - brown (10 yr 5/4 munsell), slightly wet	[:]:].	Ni	K I	<u> </u>	_			ا الحجا
brown (10 yr 5/4 munsell), slightly wet		Nã	11	1 3	-	ı		_ bentunit
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		GRAPH	C LOG	-	3	34	ur.E		
E.	DESCRIPTION	Lithelogy	Pic LOG	Conte	h 20me Dete	Tree ser	Pacer. 1	1 4 5 E	REMANUS (Diell Rais, Fluid loss, Odor, etc)
16-		ব্যবহ				41	= = =		
117	Same as above								■ wide: jewell ATA
18	teliv changes to a moderate brown (Syp 3/4 munsell)					batyake			STATION STREEL CONTROLLS FOR THE SEFERN CONTROLL OF THE SEFERN AFER.
12/						1. A. 18.			
122	SANDY SILTY CLAY, firm-Stiff, pale yellowish-brown (10 yr b/z munsell) wet with grownl sized inclusions of busky yellowish-brown (10 yr 4/2 munsell) weathered shale/claystone "befrock"								Driller notes that material becomes much Stiffer from 23 feet downward.
24	CT NO. 22238A								SHEET 3 OF 4

-		GRAPH	IC LOS	.=		_	PL ES	
	DESCRIPTION	Listalogy	Plazone for jea tel lel ler	Contest	Ple toma Opte Type rep	5	Parish Balat 6 m	REMARKS (Drill Rate, Fluid lose, Odor, e
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‡	SILTY CLAY, very Stiff, low- plastic, dusky brown (5 yr 2/2 munsell), slightly wet (CL), blocky				<u></u>			
‡ 1	plastic, duský bravn (5 yr 2/2		· #·		‡			
+ 7	munselly, slightly wet (CL), blicky				‡			
	"WEATHERED BEDROCK"		*		‡			• •
#	(SHALE OF CLAYSTONE)				‡	1		
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RIN	dward-Clyde Consultants PROJECT N G LOCATION M-1 Ponds			_	OFTA		_	UM		
iLLI	HE AGENCY DATUM EXPLORATION IN DAILY BOOK	اجمدان	$\overline{}$	DATE	STA	RYED	-	5-11-2	89 /5-12	-89
	NG EQUIPMENT CIME 55	0			LETI		EPTI	1/8.75		MIL / C
IIL C	NG WETHOO Hollow Stem Anger ORILL BIES	18" del	12	SAI	O. O	S	DIST		UNDIST.	
ZE 4	AND TYPE OF CASING 4" Schedule 40	PVC		w	ATER		FIRS	11.5	COMPL//.3	24 HRS. 6.
PE (OF PERFORATION 104 (N. 10) Shitted FROM 7.5	TO 16.3	FT	LOCG	ED	87			CHECKED BY	
ZE 4	IND TYPE OF PACK A LOUIS A # 10 - # 2 FROM L. D.	10/8.0						F.	1	
PE	OF SEALO I FROM B. O	10 6.6	787	M	DR	cis	15	गार		
	Bentonite Pellets 11 18.0'	TO 18.7		6		<u>}</u>	S	MPLES	<u> </u>	· · · · · · · · · · · · · · · · · · ·
FEET)	DESCRIPTION .	Lithology	Please treful h	motor Slice	Set es	200	Type No	Ponera Boald (Boald	REMA (Drill Rate, Fuld	
	SILTY SAND loose fine autinal.		A	P	_		-		LEGENO:	
7	SILTY SAND, loose, fine-grainer, well-sorted, subangular, moderate yellowish-brown (10 yr 5/4 munsell), slightly wet (sm)		U	И		- 1	-	11		Cement
	- Yellowish - brand () was ele		\cup	И	j	4	_	} }	11/1	Bontonik
4	slightly wet (sm) (18 yr 3/4 munsell)		IJ.	И	1	1	-	\$		0 1 1/
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, :	-SANDY SILTY CLAY, firm, low-			IJ	- 1	4		1:5		
1	plastic, dusky brown / 5 ve 2/2		[]	11	1	- 1				
j	plastic, dusky brown (5 yc 2/2 munsell), very wet with time-grained, -well sorted, subangular sand (CL)		[] }	N	ſ	1	_			
4	-well soffed, subangular sand (CL)		Ν".	N	- 1	4		H	1.	
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_ }	BILTY SAND, loose, fine-grainel, well sorted, subangular, moderate brown (5 yr 3/4 munsell), very wet			13	-	1	•		-	
-	beautiful subangular, moderate					1	•		Wate	erlevel
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	DESCRIPTION	Lithology	Picatope for Incide to ton	3 5	Parone Ogo 17 p. dr.	E		REMARKS (Drill Rate, Fluid loss, Odor, etc)
~)==		592 4 93		_	1 1	Recor.	2 20.	
8-	- Color changes to moderate yellowish - brown (10 yr 5/4 munsell)		ASSESSED OF THE SERVICES OF TH		3" p.176 "Fyr.xx	1.0 Feet		C DEPTH OF SWITTED SECTION BELLOW GL. (7.5fect)(top)
9-	•							
10-					+++++++++			
12	SILTY SAND, loose, fine-grained, well sorted, subangular, moderate - yellowish-brown (10 yr s/4 munsell), verywet (5m)				*****			
13	with 2"-3" layers of yellowish-gray (5 y 8/1 munsell) to very light-gray (N8 munsell) soft silty eleg material				*****			·
14-	SILTY SAND, loose, fine-med. Avainal, well-sortell, subangular, -moderate brown (Syr 3/4 munsell), very wet (Sm)				1 + 			•
1/5-	777388				+++++++++++++++++++++++++++++++++++++++			SHEET ZOF

SHEET _2 OF _3

		GRAPHI	C 106		}	SA	MP	LES	
(FEET)	DESCRIPTION	Lithology	Pleasure for the failed for	Weter	Pid Itame	Type Ma.	Rocor. 2		REMARKS (Orill Rate, Fluid loss, Odor, et
16	SILTY SAND, loose, fine -medium grainel, well-sorted, subangular, moderate brown (5 yr. 3/4 munsell), very wet (sm)				1 1 1 1 1 1				DEPTH OF SLATTED SECTION BELOWS G.L. (16,3 feet) (b)
17	SILTSTONE, hard, medium gray (NS munsell), with some convse grained sand and gravel inclusions. Upper foot is fractured with sicty sand matrix.								
	bottom of boring at 18.75'				11111111111				,
19						المسامينية			
70									
ZI-									
22			-						
2 <i>3</i> -					-	<u></u>			
24					-				
25-	‡					+			SUFFY 3 OF

SHEET 3 OF 3

Woodward-Clyde Consultants PROJECT NAME RMA / task 2 HOLE NO. Soil bour Pacer. It DESCRIPTION (Ortil Rate: Fluid loss, Odor, etc) - same as above 20 Note: Soil in sander tule from 20.9 ft to 22.0 ft is saturated. Y 21 Note: bottom et sorpier shoe had free water in :tata lepth of 22.0'. bottom of boring @ 22.0ft.

PROJECT NO. 22238B

107140	Clyde Consultants P LOCATION SECTION 36-17N a	nom-1.	41,01	A-	ELEV	AT 10	N AND	CATE	¹⁴ 52	HOLE NO. 5011
DRILLI	HG AGENCY DATUM FXPLOPATION	DAILLE B. H.			DATE				-23-	
		llow stem		24 -	COMP	LETH	ON D	EPTH		SANFLER MIPEITER 3" OB Split span lineurs
DAILLI	NG METHOD Hollow Storm angers	DRILL BITES		8-	, NC). OF	_7	DIST.	U TT.	UMDIST.
	IND TYPE OF CASING	10	, nead		344 W/	IPLE LEV.	5	FIRST	19.5	COMPL 24 HRS.
TYPE C	F PERFORATION	FROM	TO	FT.	LOGG				, ,	CHECKED BY
IZE A	NO TYPE OF PACK	FROM	TO	FT.	ຣ	TE	UE	N	€.	
YPE (OF SEAL	FROM	70	FT					ETTE	ļ
		<u> </u>	GRAPH	IC LO		_	•		IPLES	
FECT.	DESCRIPTION		Lithology	Pleso		Quite n.t.	Piezon	Type No.	Posting Control	REMARKS (Oriti Rais, Fluid loss, Odor, s
-	boring begins at a depth Hole Hus 18" puc casing from Surface to depth of 3.5 fa	of 3.5! in the set.								see trench los #2 for sall IDP above 3.5 feet.
7	SUTU SAND , loose , fine	arsined.	777				7			Note: Bob Holling.
٦, ٦	well sorted, subangular, - yellow: SL-brown (18 yr s	Pul Dovato	13:43		Į	- 1	7	.	1	dropped samples
47	- Vellow: SL-brown (18 vx s	// L nova		İ	- 1	į	7	-	1	approx. 2.5 ft. int
' 1	slightly wet (sm)	פליושרו די			Ì	1	7	:		Soil. We believe
- 1			1	i	- 1	- 1	7	:	ł	this plugged the
7	F		- : : -				7	-		tip and caused
7						ł	‡			only 50% recou
57	-		[:1:1:1:			I	-‡	-	1 .	on the first 5.0
_			[: 		- 1	į	‡	:		run.
4	-		_* ; _*	}	}	j	‡	:		
4	- -		: . ;		1)	4	-		1
	-		<u> : </u>		1	j	‡	:		
6	<u>L</u>		- - -)	.]	}	1	_		
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-	some small lenses (1"- pule yellowish-brown (10 yr discoloration appear.	2") of	1-1:1-1:	1			-]	-	1	
	pule yellowish-brown (10 yr	6/2)	1:11:1		1	1	1	-		
9:	discoloration appear.	,	1:111:		1		년	<u> </u>		1
· ' :	t		[[]]]		1					
	‡			1	}				1	
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	JECT NO. 22238B									SHEETOF_

Tranch #2 HOLE NO. Soil boring

	twerd-Clyde Consultants PROJECT NA	-	G.	APH	IC LOG	J	3	L \$4		1.63	REMARKS
	DESCRIPTION	Li	iho!	00 y	Plesome ter ine tel lefter	3 8	90	Type Ma.	į	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	(Ortil Rate, Fluid less, Odor,
寸	- same as above	7:1	1	: :	1		-	F	F		
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#	material becomes much wetter.		ŀ	` .			-	ŀ			
‡	material becomes much	;-		1			1	•]	
Ŧ	weller.]:				-			
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1	· <u>·</u>	;	۱.	;∤`.		Ì	-	ŀ			
‡			:	+				È			
7	Same as whome with lenses (2"-3")	, 	+	\dagger	1		-	†			
<u>‡</u>	orange (10 yr 7/4), very wet (cc to No22238B		•	¥	1]	•			
+	- overese (10 yr 7/4), very wet (cc	3F	_		}		-	<u> </u>			

Woodward-Clyde Consultants & PROJECT NAME RMA TASKZ

MOLE NO. Soil bovin

	Of PTH (PEET)	DESCRIPTION	GRAPH LHhology	Pleasenatur Surfaileitur	i de la companya de l	ap age		REMARKS (Dritt Rate, Fluid less, Oder, etc)
<u> </u>	19-	- same as above				3" poly6.7.	-1.0 to 1	Some free water in the bottom . 5 fact of sampler.
	2/-	bottom of boving at 20.0ft				****		
	22					***		
	23	- - - -				**		
	24					++++++++		·
	25					+++++++		
	26-	- -				****		·
C	27	- - - - -	·			•••		
	28-					‡		3 2

wec-/ Joodward-Clyde Consultants PROJECT NAME Porty Mountain Access Took 2 HOLE NO. 1001 Pands · Parker Exploration Inc COMPLETION DEPTH w/ polybuterate tollow Stem Auger COMPLNA WATER ELEV. CHECKED BY OF PERFORATION SIZE AND TYPE OF PACK FROM YPE OF SEAL (Drill Rate, Fluid tase, Oder, etc.) - Silty Sand-yellowish brown to yellowish gray, very fine to occasional fine . grain, with pebbles, dry, mod dense -silty sand - as above without Pebbles, damp, 100se-mod dense (mc) 3 as apore.... Clayer silt-dark brown, stiff, damp. (mL)

PROJECT NO. 22238 B

SHEET___OF_2

water level from moisture on sampled

foodward-C	tyde Consultants 🍪 Pi	ROJECT N	AME B	an	A	To	sk	77	2		HOLE NO. 36-190
N ING LOCATION	Sec 36-12			T	ELEVATION AND DATUM						
· PEHCA [Datum Exploration Inc	DALLER PUS	s Parke	er	DATE				19/3	<u> </u>	4/26/89
AILLING SOULDEN	'CME'DKO			\	COUP). OF	,	DIST.	<u>20</u>	1+	UNDIST. a
AND TYPE OF	lollow Stem Auger		800 %	end	SAM	PLES TER		FIRST			COMPLE S 24 HRS.
TPE OF PERFORAT	7 Schedule 10	PVC	10 18.1	₹T.	LOGGI	E 0 8	ľ			<u> </u>	CHECKED BY
AND TYPE OF		FROM 6.5	10 a.c		R	ob	ω	عان	٥٨		
TE OF SEAL BE	intonite Pellets	FROM 3.0	106.5								
	DESCRIPTION			Placen bretale	\neg :	Solenie 1	\$	Type No.	Portion of	Bosh C	REMARKS (Dritt Rote, Fluid tose, Oder, etc.)
blac silty	soil becomes wet k silty inclussions Sand as above Sand-yellow, fine- egrain, well sorted, P)-ml)	·				*8		<u>*</u>	Reco		Free water encountant & 10' HNU reading O over bootground
	Sand - gellow, vegling the grain, well sorted ately loose, with red yeysilt inclusions, well sons, we have a silt inclusions, we have a silt inclusions.).						
				1.1	11			l	1		

Woodward-Clyde Consultants PROJECT NAME PMA Tosk #2

WCC-1 HOLE NO. ANTOO!

[ال الرواي بي من ومن ويول ويول ويول المن المن المن المن المن المن المن الم	GRAPH		. =	3	SAN	PLES	
E	DESCRIPTION	Lithology	Piezumeter Installelies	Ì	13		1237	REMARKS (Drill Rate, Fluid tass, Odor, atc)
	•			- 0				(Drill Mate, Fluid loss, Odor, etc
7-	clayey silt-dark brown, stiff, damp.							
8-	•				+			
9	Clayetere (volcanic ash) - tan, Cream, trace green and black mineral inclussions, dry-damp (CH)				1			
10								Hole grouted to surface
	Boring terminated at 10.2 ft.							
	-				1 1 1			
	<u>-</u>				+++++			
‡	-				+++++++++++++++++++++++++++++++++++++++			
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PROJECT NO. 22238 B

oodward-Clyde Consultants 😘 pr	ROJECT N	IAME B	NV	تـــــ	λś	k.	NO	<u>.</u>	2	HOLE NO. 21003
THING LOCATION M-1 POHD AREA, BARING	LOCATION			ELEV	/AT IQ	M AN	D OAT	Ų4	520	o3.4
DATILL EXDIORATION	DAULEAR.	PARKE		DATE	STA FWI	AIEO SHEO	6-	8	- 84	16-8-89
CME - 750							EPTH	<u> 10</u>	120	FILE BY BUT BUT RATE
THE METHOD WIT DIA. H.S. A.	65/24 BIT (AST TOP		SA	IO. O	•	DIST	•		U40GT. 4
ZE AND TYPE OF CASING				•	ATER		FIRS	N	A	COMPL 24 HRS.
PE OF PERFORATION	FROM	10	FZ		GEO	G Y				CHECKED BY
ZE AND TYPE OF PACK	FROM	10	FT.		_^^					
PE OF SEAL	FROM	70	FT	שנ	E C	E	3			
		GRAP	IC LO	×	_	2			LES	
DESCRIPTION		Lithology	-	4000	Pele,	Pleron Dete	, K	딁	Ponetra Rosel Bossil A In I	REMARKS
		1	US	2	-8		2,320	ě	{	(Orli1 Agis, Fluid Igus, Odor, eic.)
) + i poste una phone par Rec		•	Γ							BORING ADVANCED
LOOSE, HOW - PASTIC, DRY, BRE TO REDDISH - BROWN, WELL SORTH			}		ZC Z		Ŀ	1		MILLY QU DW. #2.Y.
WITH SOME CLAY.	SILF		1		PL	-	_	-		MILL 6 2/3" DW.
I WITH SOME CUM.			M			1	t= 3	1		CUTING HEAD.
Ŧ			l]	24			NO WATER
<u>+</u>		1	1				E			DETECTED
-			Ì			-	F			A.T.D.
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I Branson about 615 with	,		M	1	HC	-	<u></u>	1		1
BECOMING CLAYEY SILT WITH	۲		'''		シレ		Ŧ	İ	Í	
TRACE OF FINE SAND.			l				Ŧ	ł	1	1
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FIRM TO SEFT, LOW PLATIL,			1		1	-	Ŧ		1	
WELL SCRITCH, BROWLY TO REL	DDISH-	- · ·	10	L	1	1	Ŧ		1	
I SO DIGWH, YERY SILTY CILY W	1771				ł	-	L		}	
TRACE OF SAND					l	}		1	1	

7.2		GRAPH	ic roe	. =	•	3/	la Pi	. 25	
122	BESCRIPTION	Littlelegy	***************************************	įį	100		Š		REMARKS (Drill Rate, Fluid lose, Odor, etc.)
7	FIRM TO SOFT, LOW PINSTIC, WELL SOICTED,	<u> </u>		-		- 4	1		
1.4	BROWN TO REDDISH BROWN, VERY SILTY CAY WHIT TRACE OF SAND		دا	W. PL	1				
1 4	BECOHING LT. BROWN.			R	1 4	-	П		
1 1	SE ONLINE EL BIOMP.	·~ ·				-			•
8	BE WHING BROWN TO REDDEHBROWN			المدا	1 4	-			
1 1	TO TO TO THE PARTY OF THE PARTY			W LR		•			
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1 1							H		
1]		·]				BUTTON OF BURING
107									10.0 Fr
1 ‡					1				BORING BACKFILLE
1 3					1	-			to Eizeuld Suctak
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04146	LOCATION M- pond avec	<u> </u>		ELEVATE	-	DATUM	524	61.6
RILLIN	18 ASENCY DAtum Exploration Inc		Charge Co	DAYE ST	ARTED	5-	30.	
RILLIN	IS EQUIPMENT CIME 750	<u></u>		COMPLET	NON DE	PTH IN	(2)	SAUPLER 3150. POLY
ALLIN	is uction 6" hollow stem	TORILL BIT/	570 50000	NO.		ST.		UNDIST, 2
ZE A	NO TYPE OF CASING	عـــــــــــــــــــــــــــــــــــــ	/* Nad	WATE		IAST /	<u> </u>	COMPL 6.51 24 HRS. N/
<u> </u>	FPERFORATION	!FROM	TO FT.	LOGGED		<u>_</u>		CHECKED BY
2 E A	NO TYPE OF PACK	'FROM .	TO FT.	57	FUEN			
	F SEAL	IFROM.	10 FT	mor	piss	FIT	E	
		1		<u></u>		504B		
	DESCRIPTION				S S S S S S S S S S S S S S S S S S S	Recort.	Postic Boshi C In	REMARKS (Dritt Rote, Fluid Iose, Oder, c
**************************************	grained, well-sorted grained, well-sorted angulor, moderate brown 3/4 mmsell from 6.0'-0 moderate yellowish-brown (5/4 mmsell from 0.4' b stightly wet, (SM)	, sub- m (Syr .4), 10 yr			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Note: We hit a hard object wall.
‡	becomes slightly weller					" pulybuty.		believe it was just a church of concrete or a but and continuedril
	- color change to dark y brown (10 yr 4/2 mmsell) depth of 3.0'.	ellewish- ata				olysusty.		
	-					3"6		
								Soil is satural
7	SILTY SAND, same as a with some thin lenses of pole orange (10 yr 8/2 min silty clay material	- ()-ev ()	31.15 31.15					from 6.5 to bottom of borin

SHEET OF 2

		GRAPH	ic roe	. 2	3 L	841	PLES	
200	BESCRIPTION	Littlelegy	Platered by barbyl byl byl		2 P	4004	fjl:	REMARKS (Drill Rate, Fluid toos, Odor, etc.)
	- Sane as above	71.17			‡			
	•	31375			1			
3					Ŧ		İ	
8		TI			1	.	1	
$\begin{bmatrix} 1 & 1 \end{bmatrix}$	· SILTY SAND, loose, fine-grand,				‡	- [
4	sity SAND, loose, fine-growed, well-sorted, subangular, moderake yellowish-brown (10 yk 5/4 mm.), very wet, (sm)				+	.	j	·
1 3	very wet, (sm)				I	ł		•
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[,]	-					5		٠ ١.
10-	<u> </u>	}-			Ŧ			
3		江上			‡		1	7.0
1 4	bottom of boving at 10.5 feet				Ī		1	boving growted immediately after completion
1113	_				+	.	į .	after completion
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1 4					1	•		
1. 3					1	·		
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SHEET ZOF Z

Woodward-Clyde Consultants PROJECT NAME .. DAILLING MENCY DATHER EXPLORATION INC. -30-89 COMPLETION DEPTH 10.51 SAMPLEASILE D. P. 1/46 DRILLING EQUIPMENT COME 750 ing method 6" hollow sten DRILL BIT 5/4" public 124 HRS. CHECKED BY FROM LOGGED BY STEVEN E. SIZE AND TYPE OF PACK TO EBOM . MORRISSETTE TYPE OF SEAL FROM Pier Pier SILTY SAND, loose, fine-grained, well-sorted, sub-angular, moderate yellowish-brown (10 yr 5/4 musell), dry has routs. becomes slightly west a a dotte 5 6

PROJECT NO. 22238B

SHEET___OF____

Woodward-Chyde Consultants PROJECT NAME PMA fask 2 HOLE NO. THE STATE OF THE STATE

	· ·	ERAPHI	C roe		•	34	WPLE	5	
يه	DESCRIPTION	LHhology	Planementer Section by last	įį	1	fype m	1		REMARICS (Drill Rase, Fluid Isse, Dáur, etc)
7-	Same as above Same as above except color changes to pale yellowish. brown (10 yr 6/2 musell) with thin leases (.5 "to 1.0") of vary pale orange (10 yr 8/2) and grayish-orange (10 yr 2/4) silty CLAY (CL)					3" p.1/26.44 K	8		
1	bottom of boring at 10.5 feet								boring was growted immed. after completion.
ルー					*******				
14					***********				,
16					to the state of the state of				•

104144	tward-Ctyde Consultants (en			ELEVAT 10	H AMO	DATE	" 520	63.5
AILLI	HE MENCY DATIUM EXPLORATION IN	10 ORILEAT	Paris	29				25-8	
RILLII	IG EQUIPMENT CUME 750	//-	0	_	COMPLET	ION O	EPTH	2.58	SAMPLER 3" I.O. PILY
ALLI	IG METHOO 6" hollow Stern	DRILL BIT	25/6 Enth	79	NO. O	•	OLST.		UNDIST. /L
	NO TYPE OF CASING		ra near		WATE		FIRST	7.4'	COMPL 124 HRS.
YPE C	F PERFORATION	FROM	TO	FT.				,,,	CHECKED BY
IZE A	NO TYPE OF PACK	FROM	TO	FT.	STE	:UG	ر ب	E.	·
TPE C	OF SEAL	FROM	TO	FT	mor	efi.	عري	778	
. 1			GRAPH	HC LC	<u>.</u>	•	SAL	APLES	
EE	DESCRIPTION		Lithology	Plazo		1	#	취임하는	REMARKS
5 5	•			install	etica 2	28	Ě	5 5 5 5 E	(Drill Rate, Fluid lass, Oder, a
77	SILTY SAND, loose,	fine -				1		1	
7	graned, well-sorted	sub-	1.45			7	3	ł	`` '
_‡		1 1	14114.	•	J	#	<u> </u>	1	., .
t	angular, durk yellowis	L-212ma	1:114			lt	· 6	1	٠,
4	(10 yr 4/2 musell),	strukth	[4.F.);	1	}	1 +	٦.	1	
4	(10 1/2 // L massed))	0 0	144:1:	1	- 1	-	. (4)	4	
#	wet, (sm)		T-1:1-1:		1	‡	:	1	
+	who alexand to make me	le ovamas	11111;)	l f	:	}	
7	at (10 VR 8/L) depth of 1.5 -1	.7!	1.114:			7	-	}	1
#	color changes to very po at (10 ye 8/1) depth of 1.5 -1 color changes to modern	#E	1.1/1/1.	l		i ‡	:	ł	•
_ ‡	yellow: the brown (10 yr 5/4	1) at 1.7-19	17月11年		[‡	:	1	1
- 🛨			1/1/1/		1	1 1		✓ .	
Ŧ	•		1411			Ŧ	اخ.	1	
#			15:41	1		‡	3	!	
#	_		刊.门:	[🕇		1	ł
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#	depth of 3.0 feet.		1.4.1.1	1		4	_ [1	}
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coodward-Chyde Consultants & PROJECT NAME RMA task 2 HOLE NO. 5

	GRAPHIC LOG _ S SAMPLES							HOLE NO.	
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	DESCRIPTION (Lithology	Pleasures for Inchelled for	158	20	1700	3	116.	REMARKS (Drill Rule, Fluid loos, Odor, etc)
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dward-Clyde Consultants 🤀 pp	ROJECT N	AME R	ck	mou	to	a D	ردوم	لمد	Tas	CZHOLE NO. #1
G LOCATION M-1 Ponds			4	ELEVATION NO DATUM 5262.4						
NG AGENCY DOTHER E CALCUTA TOC	ORINCER (arker		3740 3740	F 44 15	MEN	5	5/	23/	89/5/24/89
HG EQUIPMENT CIME D'SO				COMP	LETH	ON O	EPTH	19	.0'	SAMPLER W/PO 3 ODD plitspenn
MO HOLLOW Stem Auger	DRILL BITO	0 5077		SAU	PLE	5	DIST.			·
AND TYPE OF CASING	A			W.A	TER.		FIRS	77	.5	COMPL NA 24 HAS.NA
OF PERFORATION	FROM	10	FT.	FOCE	€0 €	TY				CHECKED BY
AND TYPE OF PACK	FROU	10	FY.	Bo	1	!./		_		
OF SEAL	FROM	TO	FY	Do	7 (N A	<i>.</i>	- 6 7	^	
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DESCRIPTION		Lithology	Pleso	meter letion		١	2	퉑	1	REMARKS (Drill Rais, Fhid Isse, Oder, etc.)
			Pro led !	elica :	8		ě	2	- 65	(Drill Rate, Fluid lass, Oder, etc.)
silty Sand dark yellowish b	lewin.	11:11				1		П		
finegrain with pebbles (medium	1		- 1	- {	t /	: 1			
finegrain, with pebbles (gravel), dry, mod dense		1114	l	- 1	- 1	1-1	- 1	П		
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"Vaste - lightgray with		11 ((1		- 1	‡	: 1			augers were
black veins, texture of	\		•	- 1	- [1	11.			turned to fast
silty clay, damp towet.		// /	{	- 1	- (<u> </u>	111			the waste would
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SHEET_LOF_3

Woodward-Clyde Consultants # PROJECT NAME RMA Tosk #2

Silty Sand-dark yellowish brown, very fine to fine grain, loose, moist-wet. (Sm-ml) water @ 7.5' 8 9 as above 10 11 - Silty Sand - medium yellowish brown, occ grades to a sandy silt fine to medium grain, wet, loose (3 Denver formation Claystone (weathered state) dark @ 13.91 brown, dry, mod dense, crumbly blocky 15

PROJECT NO. 22238R

Woodward-Clyde Consultants PROJECT NAME RMA Tock #2

_HOLE NO. 001-0016

		GRAPH	IC LOG	. =	1 L	544	ales	
ME ST	DESCRIPTION	Lithology	Pleasure ter ine tel let for	Confe	Ple zeme			REMARKS (Ortil Rule, Fluid loss, Odor, etc)
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17	Claystone (Weathered Shale) - as above				 -			
18								
19-	-					_\ 		Hole grouted to surface
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PROJECT NO. 22238 B

SHEET 3 OF 3

tward-Clyde Consultants	PROJECT N	IAME L	acty	mou	ينو آه	TT/	Se	nel Tes	EZHOLE NO. OCT		
LOCATION M-1. Par			7	ELEVATION AND DATUM 5264.0							
a wence Datum Exploration Inc	DANLER POL	10:00:02		ATE FO	ARTEO	3	5 7	22	189		
EQUIPMENT CME 750	R	j		OMPLE			9	.5'	SAMPLER W/ Poly la. 3 a D spht spean Free!		
Hollowstem Auger	DAILLE	0 (64)	7	NO.	OF ES	DIST		1	UNDIST. 3		
O TYPE OF CASING		D VENA	_	WATE		FIRS	19	.0'	COMPL. NA 124 HASNA		
PERFORATION	FROM	10	FT. (OGGED	SY		^		CHECKED BY		
D TYPE OF PACK	FROM .	10	F 1.	Ω	AL	1-1		•			
SEAL	FROM	10	FT	124	94 C		~				
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DESCRIPTION .		Lithology	trotal la	- S	Pieza Pete	1	Recor		(Drill Mole, Fluid Iose, Oder, etc.)		
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sandy Silt-dark yellow with some publics an	ish brown	1./-/.	ł	- 1	-	# /	Н				
with some pubbles an	dfine	ľ/:/	Ì	- 1	1 :	<u>t</u> l /	H				
gravel, loose, dry t	sm)(mc)	1.11	1	- 1	1 :	EL LI	11		[
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clayey Silt-medium yellow	heave	///	1			FIL	H				
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with some fine grain sa	na, Trace	Y//	1	1	1 -	t V I			1		
dampness, stiff (ml))	Y//	1		:	FII					
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cy of silty clay, damp	-) cousiziem.	11		- 1	-	H 11					
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soft, possibly lime		$I \setminus I \setminus I$	1			I 11	1				
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t en en en en en en en en en en en en en		1111	1		1 3	<u> </u>			and forced over		
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CT NO. 22238B									SHEET 1 OF 2		
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		GRAPH	C LOG	. =	3	54	MPLE	5	
OCPTH (TEET)	DESCRIPTION	Lithology	Piezemeter Inetalialist	Conte	Pie tome	Type Mt.	Pace.		REMARKS (OrtH Rate, Fluid loss, Odor, etc)
8-10-	(Native soil) silty Sand-dark to medium yellowish brown, finegrain, with gray waste clastics, very dense. (Clean Native soil) silty Sand-dark to medium yellowish brown, fine grain, damp, mod dense (Sm) Boring terminated at 9.5'			Y					Hole grouted to surface
112									

17- WCC-8

bodward-Clyde Consultants			1,	LEVATO	M 444	0 047	2000	-	HOLE NO
MI-1 pond avec	_		۱,	F C 441 10	-			526	
THE SOURCE DATING EXPLORATION I	MC June Rus	is Hark	EC 10	ATE FIN	SHED	<u>S.</u>		25-8	
RILLING EQUIPMENT CIME 750	Toour	£7. 2.3					<u> 7</u>		SAMPLEASIJO. POLYBON
ALLING METHOD 6" hollow stem	DRILL BITG	3/8 64	Rd	NO. C		DIST			UNDIST.
ZE AND TYPE OF CASING				ELEV		FIRS	<u>' </u>	V/A	COMPLNA 124 HRS.NA
PE OF PERFORATION	FROM	10	FEL	STE		1 4	<u>`</u>		CHECKED BY
ZE AND TYPE OF PACK	FROM	10	FT.						
PE OF SEAL	FROM	70	FT (Mox	ZKI.	SSE	-7	7E	
DESCRIPTION		Lithology	Plazons		Pleton of	Type Ma	T T M	Panetra Resett (Brown) 6 (n)	REMARKS (Drill Rote, Fluid tose, Oder, et
) large growel road fill. (3"	U_4(H)	}				₹,	٤	223-	:
		1	1	1]	-			Note: A: 3"-4"
silty SAND, loose, fin well sorted, subangular, yellow: sh-brown (lo yr 5 very wet (sm)	νη η ₋					l l l .			layer of large gravel exists on the surface. Interspersed growth was noted in the soul to a depth of 1.5-2.
Medium Park gray (N4	X1 57					Y SAMOLE			Note: water standing on the surface lenters the hole immed, No water love
same as above silty except color changes dark yellowish-brown	isistendy	JK376				ARM			was possible because of this
tank yellowish_brown 42 munsell)	· Cloyr					₩.			
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Woodward-Chyde Consultants & PROJECT NAME RMA TWK Z " HOLE NO. T

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	bottom of boving at 9.0 tect							hole growted in immediately after completion.
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PROJECT NO.

APPENDIX F GROUNDWATER OBSERVATION WELL REPORTS

Depth of surface seal below ground surface surface surface seals. Cement Depth of surface casing. C'' Square type of surface casing. C'' Square type of surface casing. C'' Square steel with a locking cop Depth of surface casing below ground I. D. of riser pipe. Type of sizer pipe: 4.0" I.D. PUC Schedule Ho Diameter of borehole Depth of borehole Depth of borehole Type of seal: bentwite pellets Elev. Cepin bottom of seal. Type of sand pack. Type of sand pack. Elev. Cepin bottom of screened section. Slotted PVC I.D. of screened section. Elev. Cepin bottom of screened section. Length of blank section. Elev. Cepin bottom of sund column. Elev. Cepin bottom of sand column. Elev. Cepin bottom of sand column. Elev. Cepin bottom of sand column.	GROOND WA	TEN OBSERVATION WE	LE REFORT
Sround levotion Sround			
Sround levotion Sround	OUTTION M-1 por	Well No. 0/083	
Elevation of top of surface casing / riser pipe. Height of top of surface casing / riser pipe above ground surface Depth of surface seal below ground surface Type of surface sealing. Cement / Square Type of surface casing. Cement / Square Type of surface casing. Cement / Square Stell with a locking app Depth of surface casing. Cement / Square Stell with a locking app Depth of surface casing. Lement / Square Type of sist pipe. 4.0" I.D. PUC/ Scheller the Diameter of borehole Depth of borehole Type of seal, bentante pellets Elev. (depth) bottom of seal, Type of seal spentante pellets Elev. (depth) pop of seal, Type of seal spentante pellets Elev. (depth) pop of seal, Type of seal spentante pellets Elev. (depth) pop of seal, Type of seal seal, bentante pellets Elev. (depth) pop of seal, Type of seal, bentante pellets Elev. (depth) pop of seal, Type of seal, bentante pellets Elev. (depth) pop of seal, Type of seal, bentante pellets Elev. (depth) bottom of seal, Type of seal, bentante pellets Elev. (depth) bottom of seal, Type of seal, bentante pellets Elev. (depth) bottom of seal, Type of seal, bentante pellets Elev. (depth) bottom of seal, Type of seal, bentante pellets Elev. (depth) bottom of seal, Type of seal, bentante pellets Elev. (depth) bottom of seal, Type of seal, bentante pellets Elev. (depth) bottom of seal, Type of seal, bentante pellets Elev. (depth) bottom of plugged blank Sentante pellets Elev. (depth) bottom of plugged blank Section. Elev. (depth) bottom of sand column.	Date Completed 5-12-	Aquifer alluvial	
Elevation of top of surface casing / riser pipe. Meight of top of surface casing / riser pipe above ground surface. Depth of surface seal below ground surface. Depth of surface seal cement / Bentonite grount I. D. of surface casing. 6" square steel with a locking cap Depth of surface casing below ground I. D. of riser pipe. Type of surface casing below ground I. D. of riser pipe. Type of surface cosing below ground I. D. of riser pipe. Type of surface the locking cap Depth of borehole Depth of borehole Type of backfill: #10-#20 Closeds Elev. depth pop of seal. Type of sacl. between pellets Elev. depth pop of scal. Type of sacl between pellets Elev. depth pop of scal scaling pellets Elev. depth pop of scal scaling pellets Elev. depth pop of scal scaling pellets Elev. depth pop of scal scaling pellets Elev. depth pop of scal scaling pellets Elev. depth pop of scal scaling pellets Elev. depth pop of scal scaling pellets Elev. depth bottom of scal scaling pellets Elev. depth bottom of scal scaling pellets Elev. depth bottom of scal scaling pellets Elev. depth bottom of scal scaling pellets Elev. depth bottom of plugged blank section. Elev. depth bottom of plugged blank section. Elev. depth bottom of scal column. Elev. depth bottom of scal column.	nspected By	Date	
Fiser pipe. Height of top of surface casing/riser pipe above ground surface. Depth of surface seal below ground surface Type of surface casing. Depth of surface casing. Depth of surface casing. Type of surface casing. Depth of surface casing. Depth of surface casing. Type of surface casing below ground 1. D. of riser pipe. Type of iser pipe. Type of iser pipe. Type of backfill: #10-#20 Clavole Sal Elev. Appli Doptom of seal. Type of sale. Depth of top of sand pack. Elev. Appli Doptom of seal. Type of sand pack. Elev. Appli Doptom of scal. Type of sand pack. Elev. Appli Doptom of scal. Type of sand pack. Elev. Appli Doptom of scal. Type of sand pack. Elev. Appli Doptom of scal. Type of sand pack. Elev. Appli Doptom of scal. Type of sand pack. Elev. Appli Doptom of scal. Type of sand pack. Elev. Appli Doptom of scal. Type of sand pack. Elev. Appli Doptom of scal. Type of sand pack. Elev. Appli Doptom of scal. Type of sand pack. Elev. Appli Doptom of scal.	Checked By	Date	Depth Interval
pipe bentonite seal from 18.0 to 18.75 Elev (depin) of hole. 18.75(4)	levotion (in the levotion of t	riser pipe. Height of top of surface casin pipe above ground surface. Depth of surface seal below surface Type of surface seal: Cem Bentonite grout 1. D. of surface casing. Type of surface casing. Depth of surface casing below 1. D. of riser pipe. Type of riser pipe: Schedule Ho Diameter of borehole Depth of borehole Type of sand pack. Elev. depth top of seal. Type of sand pack. Elev. depth top of screened seal. Depth of top of sand pack. Elev. depth top of screened seal. Describe openings olo" Slotted pVC 1. D. of screened section. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal. Elev. depth bottom of screened seal.	Square 2.0 (ft) 3.0 (ft) 3.0 (ft) 6" square 2.75 (ft) 6" square 2.75 (ft) 6.0 (ft) 6.0 (ft) 7.5 (ft) 7.5 (ft) 7.5 (ft) 6.0 (ft) 7.5 (ft) 6.0 (ft) 7.5 (ft) 6.0 (ft) 7.5 (ft) 6.0 (ft) 7.5 (ft) 6.0 (ft) 6.0 (ft) 7.5 (ft) 6.0 (ft) 7.5 (ft) 6.0 (ft) 7.5 (ft

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Rr -ct Racky Mounta, OCATION Sec 36-1 are Completed 5/8/89 ispected By hecked By	Original Depth	Page of Well No. 36-187 Aquifer Allavium Depth Interval
	Elevation of top of surface casing pipe above ground surface Depth of surface seal below surface Type of surface seal: Coment bentanite grant 1.D. of surface casing. Type of surface casing: 6 Steel with locking Coment bentanite grant Depth of surface casing below	S342.94 (1.44)
	I. D. of riser pipe. Type of riser pipe: 40 PVC (threaded) Diameter of borehole Depth of borehole Type of backfill: Elev./depth top of seal. Type of seal: Bentante Pelev./depth bottom of seal. Type of sand pack.Calarada Depth of top of sand pack. Elev./depth top of screened section: PV Describe openings No 10	10 in. 22.2' 11ets 52380/3.5' 52390/8.5' 10- "20 18.5' 5239.9/11.6'
	So ted	Section. S221/20,4 O.Sft blank S220,0/21,5 S219,3/22,2

	. 1		senal Task #2	•	of
	1Sec_				36-188
rate Com	pleted <u>5/4/8</u>	29Origin	nal Depth	Aquifer _	Alluvium
spected	Ву	· · · · · · · · · · · · · · · · · · ·	_ Date		
hecked	By		_ Dote	Depth Interv	vol
	5240.2 हमाझासाह(ः		Elevation of top of surface ca riser pipe. Height of top of surface casing, pipe above ground surface Depth of surface seal below gr	/ riser	/5)41.63 (1.43) 1.7 /1.5'
· ·		000000	surface Type of surface seal: <u>Cement</u> <u>bentanito grout</u> 1.D. of surface casing. Type of surface casing: <u>6"S</u> <u>steel</u> with lacking	- / 	3,5 6in
	U		. Depth of surface casing below	•	3.3
; -			1.D. of riser pipe. 4"ID sc Type of riser pipe: 4"ID sc 40 PVC (threaded	ledale	_4in
	<u> </u>		Diameter of borehole Depth of borehole		10 in. 23.5'
:	[. Type of backfill: NA		52367/3.5
			Type of seal: Bentonite Pell Elev. / depth bottom of seal.	lets_	5231.7/8.5'
			Type of sand pack. <u>Colorado</u> Depth of top of sand pack.	10-20	. 8.5
	*		Elev./depth top of screened sections. PVC		5228.7/11.5
			Describe openings NO 10 (.c.	<u> </u>	4 in
	.]		I.D. of screened section.		5219.9/20.3
5	'		. Elev./depth bottom of screened : . Length of blank section.	section.	0.5ft
			Elev./depth bottom of plugged be section.	olank	5218.8/21.4
	, 	4	Elev./depth bottom of sand colu Type of backfill below observati		5218.0/22,2
	, 1		pipeN		52167/23.5

ROJECT Rocky Mountain Acs	enal Tosk = 2	Page of
OC 10N Sec 36-17	Well No. 36-189	
hate Completed 5/2/89 Origin	Aquiter Allavium	
ispected By	Dote	
Thecked By	Date	Depth Interval
Sround levation \$239.9	Elevation of top of surface carriser pipe. Height of top of surface casing pipe above ground surface Depth of surface seal below ground surface Type of surface seal: Cement bentonite ground 1.D. of surface casing. Type of surface casing. Type of surface casing below ground surface casing a surface casing below ground surface casing below ground surface casing below ground surface casing below ground surface casing below ground surface casing below ground surface casing below ground surface casing below ground surface casing below ground surface casing below ground surface casing below ground surface as a surface surface surface ground su	
	Elev./depth of hole	<u> 5217.4/22.5</u>

PROJECT Rocky Manatain Out ION Sec 36-1 Date Completed 4/26/89 Ori Dispected By Thecked By	Page of Well No36-190 Aquifer _Alluvium Depth Interval	
Sround levotion 5239.7 SINIEMENTALE O. O. O. O. O. O. O. O. O. O	Elevation of top of surface cariser pipe. Height of top of surface casing pipe above ground surface. Depth of surface seal below ground surface. Type of surface seal: Cement beatonite ground. I.D. of surface casing. Type of surface casing. Steel with lacking. Depth of surface casing below.	S241.08 (1.38)
	I.D. of riser pipe. Type of riser pipe: 4" T.D. s 40 PVC (+hreade Diameter of borehole Depth of borehole Type of backfill: NA	chedule
The find of the first of the fi	Elev./depth top of seal. Type of seal: <u>Rentonite</u> Pel Elev./depth bottom of seal. Type of sand pack. <u>Calarada</u> Depth of top of sand pack. Elev./depth top of screened section: <u>PVC</u> Describe openings <u>Na/O</u> .01	ion. <u>5230,85/8.85</u>
	Slotted I.D. of screened section. Elev./depth bottom of screened Length of blank section. Elev./depth bottom of plugged is section. Elev./depth bottom of sand colo Type of backfill below observat	4in.
	pipeElev./depth of hole	5219.7/200'

PROJECT Rocky Mountain Asseral Task 2 LC :ION Sec 36-17 Date Completed 5/11/89 Original Depth Inspected By Date Checked By Date	Page of Well No36-191 AquiferDenver Formation Depth Interval
Elevation of top of surface capipe above ground surface Depth of surface seal below surface Type of surface seal: Central co	JS249.7 JS2
I. D. of riser pipe. Type of riser pipe: 4" T 40	Fellets 5232.3/160' S226.4/21.9' Section. PVC (.010")
I.D. of screened section. Elev./depth bottom of screened section. Length of blank section. Elev./depth bottom of plugging section. Elev./depth bottom of sand Type of backfill below observing. Elev./depth of hole.	

RN IECT Rocky Mount OCMI ION Sec Tate Completed 5/19/89 Ispected By hecked By	Original D		Well No Aquifer _	o1 36-192 Denver ation
Pround levation 5253.68	Heighipe Dep Sur Typ I.D. Typ Dep	vation of top of surface cer pipe. In of top of surface casing above ground surface seal below face be of surface seals. Ceme hentonite ground of surface casing. It is a surface casing se of surface casing. It is a surface casing below to the fiser pipe. In of surface casing below to the fiser pipe. In of the fiser pipe: 4" I.D. YO PVC (thread)	ground Squere Cap ground schedule	/s255.14 (1.46) 1.7 /1.5' 40.0' 6in
	Dep	meter of borehole th of borehole e of backfill:		10in 65.0'
	Typ Elev Typ Dep	v./depth top of seal. ve of seal: Rentanite Pe v./depth bottom of seal. ve of sand pack. Calorada oth of top of sand pack. v./depth top of screened section:	**(0-**20 tion. VC	521318/40.01 520818/450 45.0 5198.58/55.1
		Slotted of screened section.	.010")	4in. 518758/63.9
	Leng Elev sect	v./depth bottom of screened gth of blank section. v./depth bottom of plugged tion. v./depth bottom of sand co be of backfi <u>i</u> l below observa	blank Jumn.	5/88.68/65.0°
	pipe	4.7		5188.68/65.0

OLITION SECTION 3L	task 2	Page of
Mie competed	Date	Aquiter <u>Allavial</u>
Inspected By	Date	Depth Interval
Ground Tevation SILTY CLAY to .3 SILTY SAUD .3' to 15.3'	Elevation of top of surface criser pipe. Height of top of surface casing pipe above ground surface. Depth of surface seal below a surface. Type of surface seal: Ceme bentonite ground. 1.D. of surface casing. Type of surface casing. Depth of surface casing below.	3.5 (ft) ground 3.5 (ft) are Stel ground 2.75 (ft)
15.31 to 18.5 ft Same as whome with 2"to 3" Jenses of pole overage silty elany Importance below 18.5 ft.	I. D. of riser pipe. Type of riser pipe: PVC Diameter of borehole Depth of borehole Type of backfill: #10-#20 Col Elev. depth top of seal. Type of seal: bentonike per Elev. depth bottom of seal. Type of sand pack. #10-#20 Col Depth of top of sand pack. Elev. depth top of screened section: Siether PVC I.D. of screened section. Elev. depth bottom of screened Length of blank section. Elev. depth bottom of plugged section. Elev. depth bottom of sand co Type of backfill below observa pipe. #10-#20 SAND Elev./depth of hole.	10.0"(in) 19.0'(ft) 19.0'(ft) 3.5'(ft) 5.5'(ft) 6.9'(ft) 6.9'(ft) 15.7'(ft) 1.0'(ft) 1.0'(ft) 1.0'(ft) 17.3'(ft)

RMA task 2	·	, ,
OJECI		Page of
CATION <u>Section</u> 36	20 > (2)	Well No. 36194
te ampleted 6/16/89 Origin	al Depth 28.0 (f+)	Aquiter alluvial
pected By	Date	
ecked By	Date	Depth Interval
	Elevation of top of surface ca riser pipe.	sing/ 5256.16
	riser pipe.	
	Height of top of surface casing,	1 riser 2.0(ft)
ound vation	pipe above ground surface	
वाह्याह्याह्याह्याह्य	Depth of surface seal below gr	ound 4.0 (ft)
SILTY SAND, Lase	Type of surface seal: Ceine	nt/
fine-grained, well !!	bentonite seal	
Sorted, subangular, O. D. Bark yellows & born	1.D. of surface casing.	6"square
in surface to mal.	Type of surface casing: 6" 5	Run =
yellowix-brown below	steel with locking care	200(2)
1.1 feet. slightly west	Depth of surface casing below of	$\frac{2.75(H)}{1}$
		4/0:01
	1. D. of riser pipe. Schelule Type of riser pipe: Schelule	. 40
	PVC with threaded co	nuections .
!	Diameter of borehole	10.0 mch
	Depth of borehole	28.0 (ft)
natoral becomes wet	Type of backfill: #10-#20 6/51	indo sand
t - Lepth of 12.5 ft.	Flav (denth top of seal	4.0 (++)
	Type of seal: bentonite pe	9.0 (ft)
free water enters tube	Fley denth bottom of seal.	1.0 (11)
at a depth of 16.8 ft.	Type of sand pack. $\#13-\#20$ (9.0 (H)
color changes to a	Depth of top of sand pack.	11/2 /(1)
moderate born at a	Type of screened section: Slatter	on PVC. 17.4 (17)
Lepth of 19.0(4)	Describe openings #10 5/.HeQ	
with some thin searchs		
of very pole viringe.	I.D. of screened section.	4.0 inch
to 21.6.	Elev. depth bottom of screened s	23.0(A)
saudy sicry ccay, pole	Length of blank section.	1.0 (f+)
yellowish-brown w/grock	Elev. depth, bottom of plugged b	
in the salle set - best and	section.	27.0 (+7)
11 tone (21.6'-26.5')	Elev depth bottom of sand colu	mn. 28.0 (A)
26.5 to 28.0'. SILTY	Type of backfill below observation	on
CLAY, blocky, dusky	pipe. #10-#20 Colorado SAN	28.0(ft)
BEDSOCK WEATHERED	Elev depth of hole.	<u> </u>

APPENDIX G
EXPLORATORY TRENCH CROSS-SECTIONS

LOGGER: STEVEN & MORRISSETTE

DATE: 4-24-89

BACKHOE OPERATOR: CHARLIE WHARTON

Time: 15:30

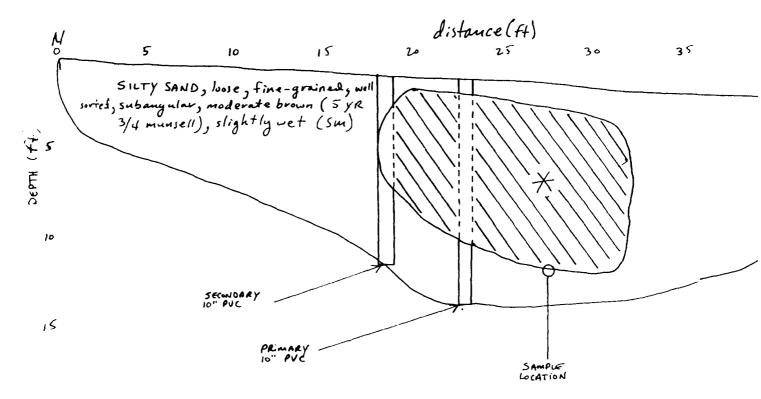
INITRUMENT READINGS:

- a) HA'u Background
- 5) MIB-All negative

PROJECT NAME #: RMA task 2 TRENCH ID: TRENCH #1, section 36

COMPASS ORIENTATION: 348°NW

SCALE: 1"=5"



* DEBRIS: Various scrap metal (wire, steel staps incendiary casings) , sitty sand make

(2

Job No. : Prepared I

Frepare

_____1`

1

, Ar

PROJECT NAME /#: RMA task 2

TRENCH ID: TRENCH #1, section 36-17N, anomaly aven A

COMPASS ORIENTATION: 348 NW

SCALE: 1"=5"

MCE (ft)
25 30 35 40 45

DEETH
10 The Location

is: Various scrap metal (wire, steel staps, burnek out incendiary casings), sitty sand matrix.

(3)

(2)

Job No. : 22238

Prepared by: S.E M.

Date: 8/14/89

Figure G-1 CROSS-SECTION OF TRENCH NO. 1 SITE 36-17N ANOMALOUS AREA A

LOGGER: STEVEN & MORRISSETTE

DATE: 4-25-89

BACKHOE OPERATOR: JIGGS ENNIS

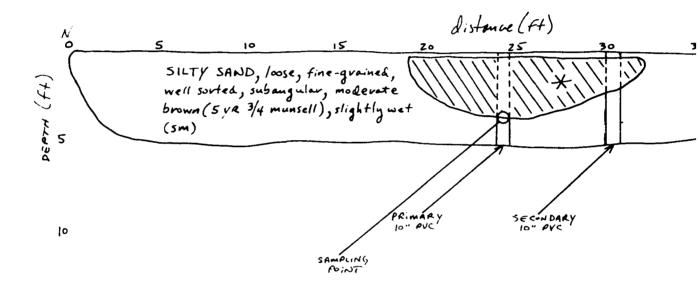
Time: 08:46

INSTRUMENT READINGS!

- a) 4Nn Background
- b) MIB All negative

PROJECT NAME #: RMA t TRENCH I.D.: TRENCH #2, ORIENTATION: 353 NW

SCALE: 1" = 5'



* DEBRIS: Various pieces .

burned-out inc

(j

(y)

THE REPORT OF THE PARTY OF THE

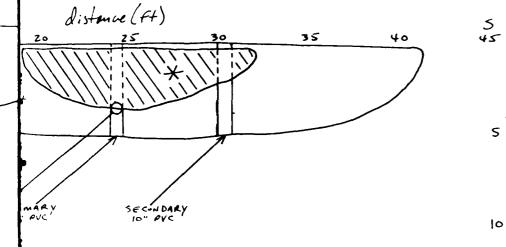
PROJECT NAME /#: RMA task 2

TRENCH I.D.: TRENCH #2, SECTION 36-17N, anomaly area A

ORIENTATION: 353 NW

SCALE: 1" = 5'

2



* DEBRIS: Various pieces of scrap metal, wive, burned-out incendiary casings,

()

Job No. : 22238

Prepared by: S.E.M.

Date: 8/14/89

9

Figure G-2 CROSS-SECTION OF TRENCH NO. 2

SITE 36-17N ANOMALOUS AREA A LOGGER; STEVEN E. MORKISSETTE

DATE: 4-25-89

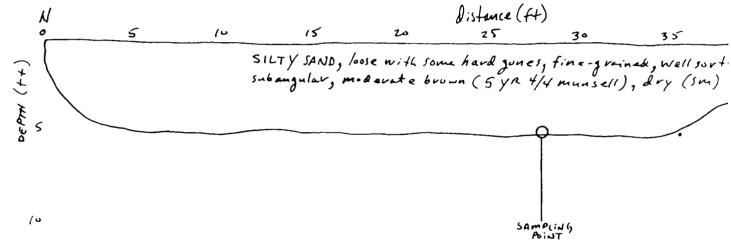
BACKHOE OPERATOR: JAMES "Ji445" ENNIS

TIME: 11:43

INSTRUMENT READINGS:

- a) Hola-Background b) M18-All negative

PROJECT NAME/#: RMA task 2 TRENCH IO: TRENCH #3, section COMPASS ORIENTATION: 031" HE SCALE: 1"=5"



PROTECT NAME/#: RMA task 2
TRENCH IO: TRENCH #3, section 36-17N, anomaly aven F
COMPASS ORIENTATION: 031° NE
SCALE: 1"= 5'

Jistance (ft)

25

30

35

4

some hard gones, fine-grained, well sorted, brown (5 yr 4/4 munsell), dry (sm)

SAMPLING BINT DEPTH (++)

45

10

Job No. : 22238

Prepared by: S.E.M.

Date: 8/14/89

Figure G-3 CROSS-SECTION OF TRENCH NO. 3 SITE 36-17N ANOMALOUS AREA F

3

red

LOGGER: STEVEN E. MORRISSETTE

DATE: 4-26-89

BACKHOE OPERATOR: CHARLIE WHARTON

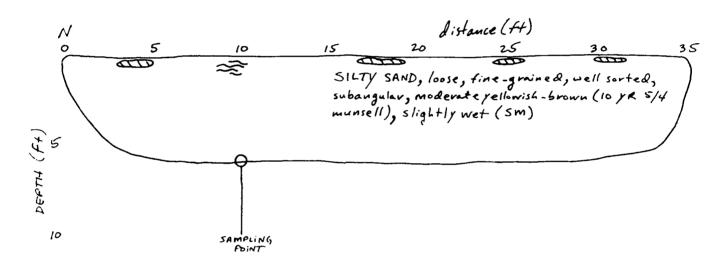
TIME: 09:30

INSTRUMENT READINGS:

- a) HNU Background b) M18 MI negative

PROJECT NAME /#: RMA task 2 TRENCH I.D.: TRENCH #4, secti COMPASS ORIENTATION: 350° Nu

SCALE: /"=5'



15

LEGEND: D - surface burn marks

= - burial metal bars (approx. 3/8" diameta

Job No.

Prepared

Date:

369RTON

PROJECT NAME /#: RMA task 2

TRENCH I.D.: TRENCH #4, section 36-17N, anomaly avea H COMPASS ORIENTATION: 350° NW

SCALE: /"=5"

distance (++)

40

ND, loose, fine-grained, well sorted, ,, moderate yellowish-brown (10 yr 5/4

slightly wet (Sm)

5

OD - surface burn marks

15

- burial metal bars (approx. 3/8" diameter)

Job No. : 22238 Prepared by: S.E.M.

Date: 8/14/89 Figure G-4 CROSS-SECTION OF TRENCH NO. 4 SITE 36-17N ANOMALOUS AREA H

8/

, 1

LOGGER: STEVEN E MORRISSETTE

DATE: 5-3-89

BACKHOE OPERATOR: JAMES "TIGGS" ENNIS

TIME: 13:30

INSTRUMENT READINGS:

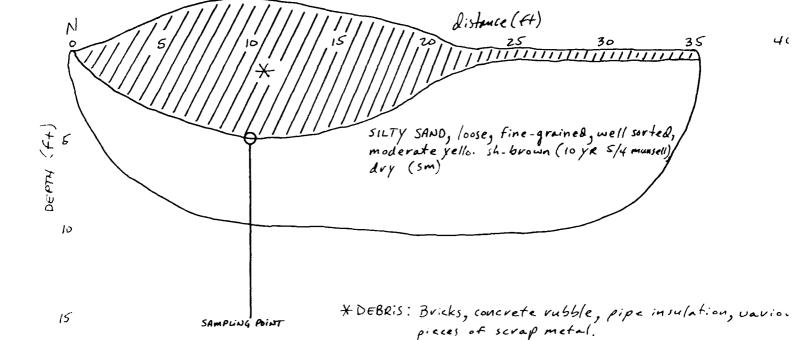
a) HALU - Background

b) MIB- All negative

PROJECT NAME /#: RMA task 2

TRENCH I.D.: TRENCH #5, section 36

COMPASS ORIENTATION: 332° SCALE: 1"=5"



Job No. :

Prepared by:

Date:

PROJECT NAME /#: RMA task 2

TRENCH I.D.: TRENCH #5, section 36-17N, anomaly area H

COMPASS ORIENTATION: 332° SCALE: 1"=5'

" ENNIS

distance (++) SAND, loose, fine-grained, well sorted, ate yellowish-brown (10 yr 5/4 munsell)/

5 40 45

5

Bricks, concrete rubble, pipe insulation, various pieces of scrap metal.

15

Job No. : 22238

Prepared by: S.E.M.

Date: 8/14/89

Figure G-5 CROSS-SECTION OF TRENCH NO. 5 SITE 36-17N ANOMALOUS AREA H



LOGGER: STEVEN E MORRISSETTE

DATE: 5-4-89

BACKHOE OPERATOR: Bud Thrift

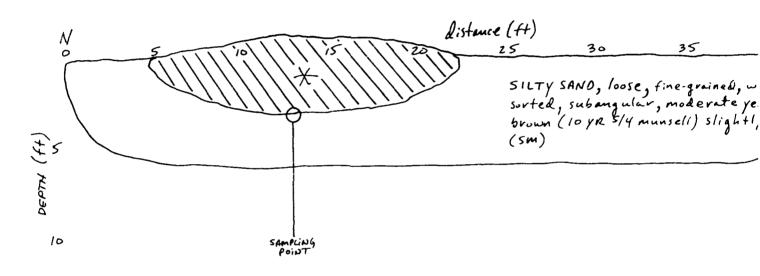
Time: 11:20

INSTRUMENT READINGS:

a) HNu-Background

b) MIB- All negative

PROJECT NAME /#; RMA task 2 TRENCH I.D.: TRENCH #6, section COMPASS ORIENTATION: 343° NW SCALE: 1"=5"



15

* DEBRIS: Bricks, concrete rubble, asphala
plastic caps, barrel lids, variou
rebar

Job No.

Prepare

Date:

PROJECT NAME /# : RMA task 2

TRENCH I.D.: TRENCH #6, section 36-17N, anomaly area H

COMPASS ORIENTATION: 343° NW

SCALE: 1"=51

Distance (++)

SILTY SAND, loose, fine-grained, well-sorted, subangular, moderate yellowish-brown (10 yr 5/4 munsell) slightly wet (sm)

5

1661 re,

* DEBRIS: Bricks, concrete rubble, asphalt rubble, plastic cops, barrel lids, various wire,

rebar.

15

Job No. : 22238 Prepared by: S.E.M. Date: 8/14/89

Figure G-6 CROSS-SECTION OF TRENCH NO. 6 SITE 36-17N ANOMALOUS AREA H

)

LOGGER: STEVEN E. MORRISSETTE

DATE: 4-26-89

BACKHOE OPERATOR: CHARLIE WHARTON

TIME: 11:55

INSTRUMENT READINGS:

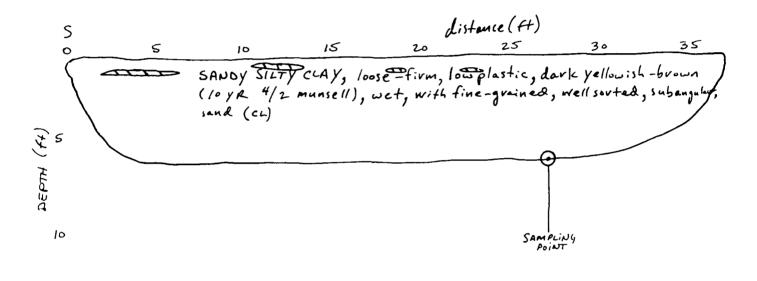
- a) HNU Background
- 6) MIB All negative

PROJECT NAME / #: RMA task 2.

TRENCH I.D.: TRENCH #7, section 36.

COMPASS ORIENTATION: 3-8" Now 00.

SCALE: /"=5'



15

LEGENO: all - Rust staining at a depth of 0.5-1.0 foot

Job No. :

Prepared by:

Date:

₹.

PROJECT NAME / #: RMA task 2

TRENCH I.D.: TRENCH #7, section 36-17N, anomaly area #

COMPASS ORIENTATION: 3-8" NW 006"

SCALE: 1"=5'

Listance (ft) 20 25

35

40

firm, lowplastic, dark yellowish - brown, with fine-grained, well sorted, subangular,

SAMPLING POINT

5

15

. Rust staining at a depth of 0.5-1.0 foot.

Job No. : 22238 Prepared by: S.E.M.

8/14/89

Figure G-7 CROSS-SECTION OF TRENCH NO. 7 SITE 36-17N ANOMALOUS AREA H

LOGGER: STEUEN E. MORRISSETTE

DATE: 5-3-89

BACKHOE OPERATOR: CHARLIE WHARTON

Time: 10:15

INSTRUMENT READINGS:

- a) HNn Background
- 5) M18 All negative

PROJECT NAME/#: RMA task Z TRENCH I.D.: TRENCH 7B, section 36-17 COMPASS ORIENTATION: 340°

SCAUE: ("= 5"

SILTY SAND, loose - med dense, fine-grained, well-sorted, subangular, dark yellowish-brown (14 yr 4/2 munsell), very wet (5m)

15

10

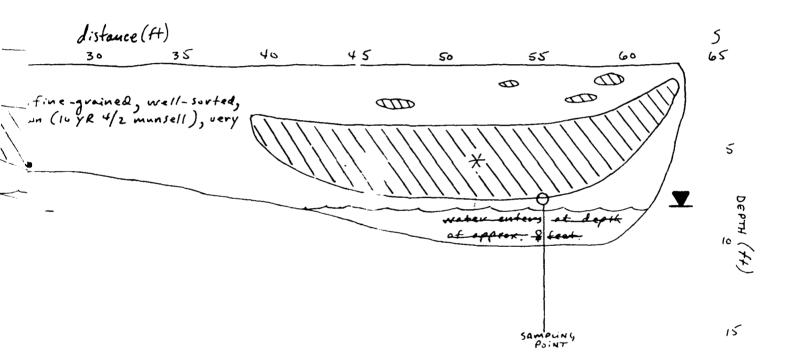
* DEBRIS: Burned wood, charcoal, various pieces of scrap metal (pipes, sludge, rubber hoses, rust staining, silty sault matrix.

ANJECT NAME/#: RMA task Z

NCH I.D.: TRENCH 7B, section 36-17N, anomaly aven H

1PASS ORIENTATION: 340°

LE: ["= 5"



prious pieces of scrup metal (pipes, wire, cable), black fgray staining, silty sand matrix.

22238 Figure G-8 CROS

Prepared by: S.E.M.

Job No. :

Date: 8/14/89

Figure G-8 CROSS-SECTION
OF TRENCH NO. 7B
SITE 36-17N
WEST OF ANOMALOUS AREA H

LOGGER: STEVEN E MURRISSETTE PROJECT NAME /#: RMA task # 2 TRENCH I.D.: TRENCH # 8, section 36-17N, anomaly Compass ORIENTATION: 348° DATE: 5-3-89 BACKHOE OPERATOR: CHARLIE WHARTON SCALE: 1" = 5' TimE: 11:34 INSTRUMENT READINGS: n) HNu - Background 6) m18 - All negative distance (ft) 15 35 30 40 10 SILTY SAND, loose, fine-grained, well-sorted, subangular, moderate yellowish-brown (10 yr 5/4 munsell), slightly wet (5m)

*DEBRIS: Wood, bricks, concrete rubble. (This material is o very near to grown surface & is inferred to be surface dumped material).

KT,

Job No. : 2
Prepared by: S.I

Date :

PROJECT NAME /#: RMA task #2

TRENCH I.D.: TRENCH # 8, section 36-17N, anomaly area H

COMPASS ORIENTATION: 3480

SCALE: 1" = 5'

distance (ft)

30

35

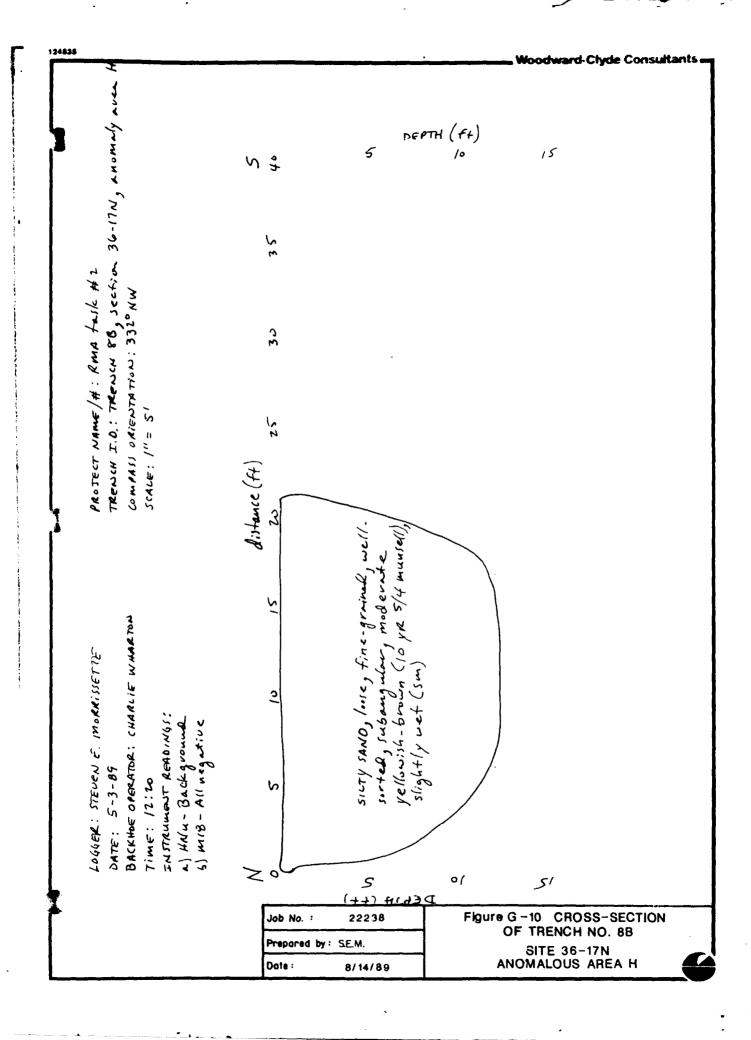
40

AND, loose, fine-grained, well-sorted, subangular, te yellowish-brown (10 yr 5/4 munsell), slightly

Ŋ

is: Wood, bricks, concrete rubble. (This material is at or very near to grown surface & is inferred to be surface dumped material).

22238 Job No. : Prepared by: S.E.M. 8/14/89 Figure G-9 CROSS-SECTION OF TRENCH NO. 8 SITE 36-17N ANOMALOUS AREA H



PA40 1

LOGUEZ: STEUEN E. MORRISSETTE

DATE: 4-26-89 \$ 4-47-89

BAC: HOE SPERATOR CHARLIE WHARTON

TIME: 13:00 \$ 10:20
INSTRUMENT RADINGS:

a) HNu - 40 pp in spike at 6.0 feet, stnerwise buckground

6) MIZ - All regative

PROJECT NAME #1 KM4 TASK INTREMENT TRENCH INTREMENTATION: 3380
SCALE: 1"=5"

Compression of the state of the

SAND, El-Ty C-A/s firm-stiff, 122 - 2/12th c, dark yellowish-brown (10 ye +/2 munsell), with fine-grained, well sorted, subangular sound grains, wet (CL)

TO THE BURIOUS

15

24835

PA . 5 2

Y airing section somethy area H

LOGGER: STEUEN E. MORRISSETTE DATE: 4-26-89 \$ 4-27-89 BACKHOE OPERATOR: Time: 13:00 \$ 10:20

PROJECT A TRENCH I COMPASS SCALE : 1

distance 4

55 SANDY SILTY CLAY, firm - Stiff, lower dark yellowish brown (10 yr 4/2 munse) with fine-grained, well sorted, war sauk, wet (CL)

* DEBRIS: Burn marks, charconi, some mete some green & yellow discoloration.

Job No. : Prepared b

Date:

PAGE 2

MORRISSETTE NTA 4-27-89

- 20

PROJECT NAME /#: RMA task 2

TRENGH I.D.: 9A, SECTION 36-17N, anomaly area H

80

COMPASS ORIENTATION: 336°

SCAUE: 1"=5"

SANDY SICTY CCAY, firm-Stiff, Isw. Hastic, dark yellowish-brown (10 yr 4/2 munsell), with fine-grained, well sorted, some angular sand, wet (CL)

85

,

13

1=62is: Burnmarks, charcoul, some metal debris (wire, burnade fuses), some green, fyellow dispolaration.

15

(3

Job No : 22238
Prepared by: S.E.M.

Date: 8/14/89

Figure G-11 CROSS-SECTION OF TRENCH NO. 9A SITE 36-17N ANOMALOUS AREA H LOGGER: STEVEN E. MORRISSETTE

DATE: 4-26-89

BACKHOE OPERATOR: JAMES "JIGGS" ENNIS

TIME: /3:30

INSTRUMENT READINGS! a) HNu - Background 5) M18 - A11 ungative

PROJECT NAME/#: RMA task 2 TRENCH I.D.: TRENCH 9B, SECTION COMPASS ORIENTATION: 336°

SCALE: 1"=5"

distance (ft)

5 40 15 35 10 SILTY SAND, loose, fine-grained, well-sorted, subangular moderate yellowish-brown (10 yr 5/4 munsell). slightly wet (sm)

an on

* DEBRIS: Wood, burned wo pieces of metal (1 pipes, straps), so bottles.

OD - metal debvis

PROJECT NAME/#: RMA task 2.

TRENCH I.D.: TRENCH 9B, SECTION 36-17N, anomaly area H

COMPASS ORIENTATION: 336°

SCALE: /"=51

" ENNIS

distance (ft)

25 30 35 40 45 50 55

fine-grained, well-sorted, subangular

-brown (10 yr 5/4 mansell),

5

FDEBRIS: Wood, burned wood, charcoal, various
pieces of metal (bars, 3"4" diameter
pipes, straps), some rust staining, various empty
bottles.

and - metal debvis.

Job No. : 22238

Prepared by: S.E.M

Date: 8/14/89

Figure G-12 CROSS-SECTION OF TRENCH NO. 9B SITE 36-17N ANOMALOUS AREA H LOGGEL: STEVEN E, MORRISSETTE

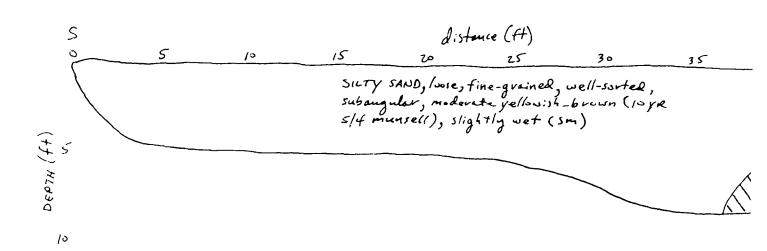
DATE: 4-26-89

BACKINE OPERATOR: JAMES "JIGGS" ENNIS

Time: 14:15

INSTRUMENT READINGS: ..) HNu - Background 5) M18 - All negative PROJECT NAME) #: RMA task 2.
TRENCH I.D.: 9C, SECTION 36
COMPASS ORIEN TATION: 340°

SCAUE: 1"=5"



15

* DEBRIS: Wood, burned wood various metal debrempty bottles.

Ty

Jo

Dat

PROJECT NAME / #: RMA task 2.,
TRENCH I.D.: 9C, SECTION 36-17N, anomaly area H
COMPASS ORIEN TATION: 340°
SCALE: 1"=5"

distance (ft)

D 25 30 35 40

Lose, fine-grained, well-sorted,
moleveta yellowish-brown (loyre

1), slightly wet (sm)

DEPTH (f

* DEBRIS: Wood, burned wood, charcol, uavious metal debris, some small empty bottles.

(2)

Job No.: 22238

Prepared by: S.E.M.

Date: 8/14/89

Figure G-13 CROSS-SECTION OF TRENCH NO. 9C SITE 36-17N ANOMALOUS AREA H

?

4**6**7 E

LOGGER; STEVEN E. MURKISETTE

DATE: 5-1-89

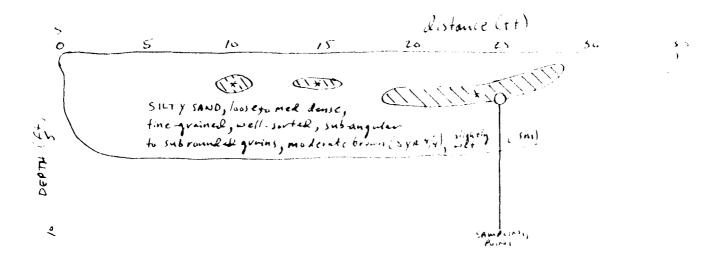
BACKHOE OPERATOR: BUD THRIFT

TIME: 13:45

INSTRUMENT READINGS:

- A) HNu Background
- 5) m18 A'l negutive

PROJECT NAME # RMA FUNCT TRENCH ID TREASON # G, 162 FOR COMPASS ORIENTATION 354 NN SCALE 1972 S'



12

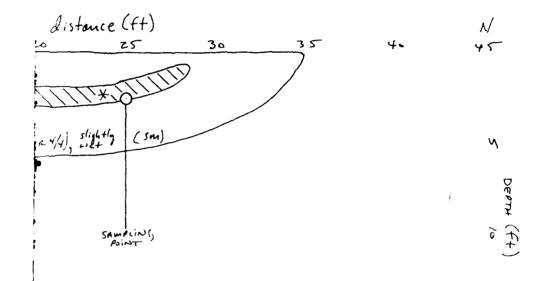
& lit ARIT: Burn marks, vurious preces it metal & staining

13

Jub No Preparei

Dole

PROJECT NAME #: RMA task 2
TRENCH ID: TRENCH #10, SECTION 36-17N, anomaly area H
COMPASS ORIENTATION: 334°NW
SCALE: 1"=5"



SEBRIS: Burn marks, various pieces of metal debris, rust staining.



Job No. :	22238
Prepared by:	S E.M.
Date :	8/14/89

Figure G-14 CROSS-SECTION OF TRENCH NO. 10 SITE 36-17N ANOMALOUS AREA H LOGGER: STEUEN E MORRISSETTE

DATE: 4-27-89

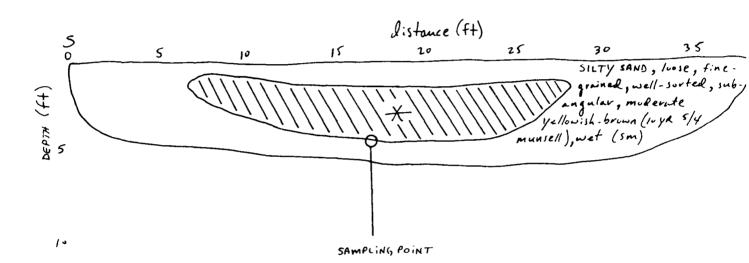
BACKHOE OPERATOR: BUD THRIFT

TIME: 12:30

INSTRUMENT READINGS:
a) HNu - Background
b) M18 - All negative

PROJECT NAME/#: RMA task 2
TRENCH ID: 11, section 36-17N, A
COMPASS ORIENTATION: 334° NW

SCALE: /"= 5"



* DEBRIS: Various pieces of scrap metal (wire, cable, burne fuse casings, metal bars & straps), some empt small glass amber bottles & clear glass vials some green & yellow discoloration, sifty sand matrix.

Date :

Job No. Prepare PROJECT NAME /#: RMA Hask 2 TRENCH ID: 11, section 36-17N, anomaly aven H COMPASS ORIENTATION: 334 NW SCALE: 1"= 51

ance (ft) 25 SILTY SAND , loose , fine grained, well-sorted, sub-Yangular, mulerate yellowish-brown (10 yr 5/4) munsell), wet (sm)

Ν 40

10

Marious pieces of scrap metal (wire, cable, burned fuse cusings, metal bars & straps), some empty small glass amber bottles & clear glass vials, one green & yellow discoloration, sifty sand matrix

22238 Job No. : Prepared by: S.E.M.

Date:

Figure G-15 CROSS-SECTION OF TRENCH NO. 11 SITE 36-17N ANOMALOUS AREA H

8/14/89

LOGGER: STEUEN F. MORKISSETTE

DATE: 5-1-85

BACKHOE O PERATOR: CHARCIE WHARTON

Time: 08:30

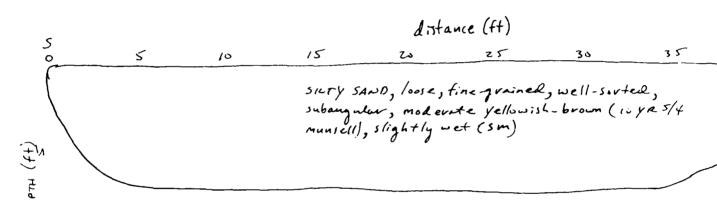
INSTRUMENT READINGS:

a) HNu - Background

5) M18 - All negative

PROJECT NAME /#: RMA task
TRENCH ID: TRENCH /2, section
C: MPAJS URIENTATION: 324° NW

SCAUE: 1"=5"



C

.

PROJECT NAME #: RMA task 2
TRENCH ID: TRENCH /2, section 36-17Ny anomaly area H
CAMPAJJ URIENTATION: 324° NW
SCALE: /"=5'

S DEMIN (

45

15

Jab No. :

22238

Prepared by: S.E.M.

Date: 8/14/89

Figure G-16 CROSS-SECTION OF TRENCH NO. 12 SITE 36-17N ANOMALOUS AREA H



LOGGER : STEVEN E. MORRISSETTE

DATE: 4-27-89

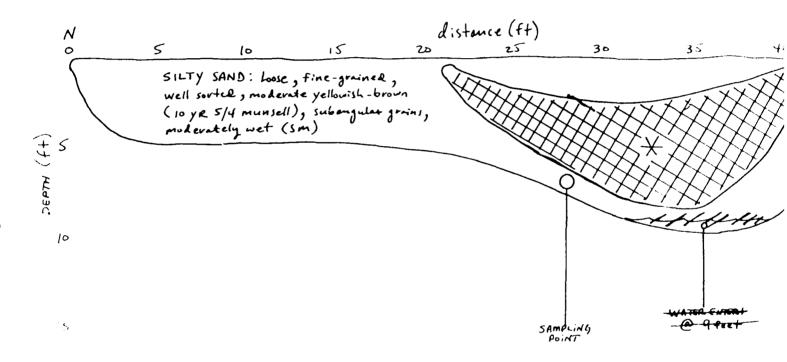
BACKHOE OPERATOR: JAMES "JIGGS" ENNIS

Time: 13:30

INSTRUMENT READINGS:

- a) Hivu Background
- b) MIB All . egative

PROJECT NAME # : RMA task 2 TRENCH I.D.: TRENCH #13 , Sectio COMPASS ORIENTATION: 336° NW SCALE: 1"=5"



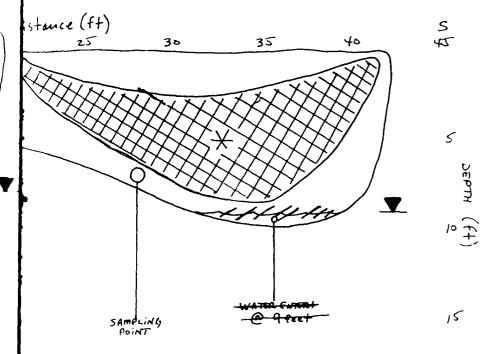
* DEBRIS: Burned wook , bricks , rock fr charcoal, 4" metal pipes pieces of scrup metal, s & vials . full clear glass

> 100 100 Prepared

PROJECT NAME /# : RMA task 2

TRENCH I.O.: TRENCH #13, section 36-17N, anomaly area # COMPASS ORIENTATION: 336° NW

SCALE: 1"=5'



* DEBRIS: Burned wood, bricks, rock fragments, charcoal, 4" metal pipes, various pieces of scrap metal, small bottles fuials. full clear glass

> 22238 Job No. : Prepared by: S.E.M. Date: 8/14/89

Figure G-17 CROSS-SECTION OF TRENCH NO. 13 SITE 36-17N ANOMALOUS AREA H

LOGGER: STEVEN E. MORRISSETTE

DATE: 5-1-89

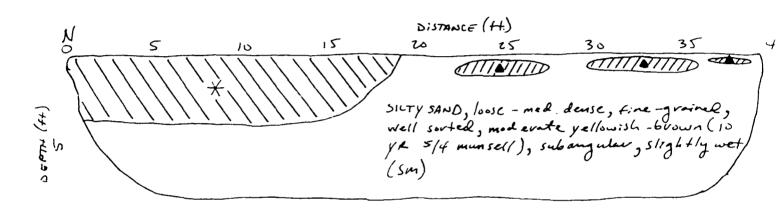
BACKHOE OPERATOR: CHARLIE WHARTON

TIME: 09:30

3

INSTRUMENT READINGS: a) HNa - Background 6) MIB - All negative

PROJECT NAME/#: RMA task 2 TRENCH I.O.: TRENCH 14A, SECTION 36-17N, AND COMPASS ORIENTATION: 344"NW SCAUF: 1"=5'



XDEBRIS: LIGHT GRAY (), POWDERY MATERIAL (APPEARS ? WNCHETE DUST).

A DEBRIS: SURFACE BURN MARKS @ A DEDTH OF . 5f+ to 1.0f+.

Job No.

Prepared

Date:

(1)

PROJECT NAME H: RMA fask 2 -y + TRENCH I.O.: TRENCH 14A, SECTION 36-17N, ANOMALY AROO H COMPASS ORIENTATION: 344"NW SCALE: 1"=5"

DISTANCE (H)

Ty SAND, loose - med deuse, time-grainel, 11 sorted, moderate yellowish - brown (10 5/4 munsell), subangular, slightly wet,

Sept (+)

__

y (), POWDERY MATERIAL (APPEARS TO BE

N MARKS @ A DEDTA OF . 5f+ to 1.0f+.

Job No. :

Prepared by: S.E.M.

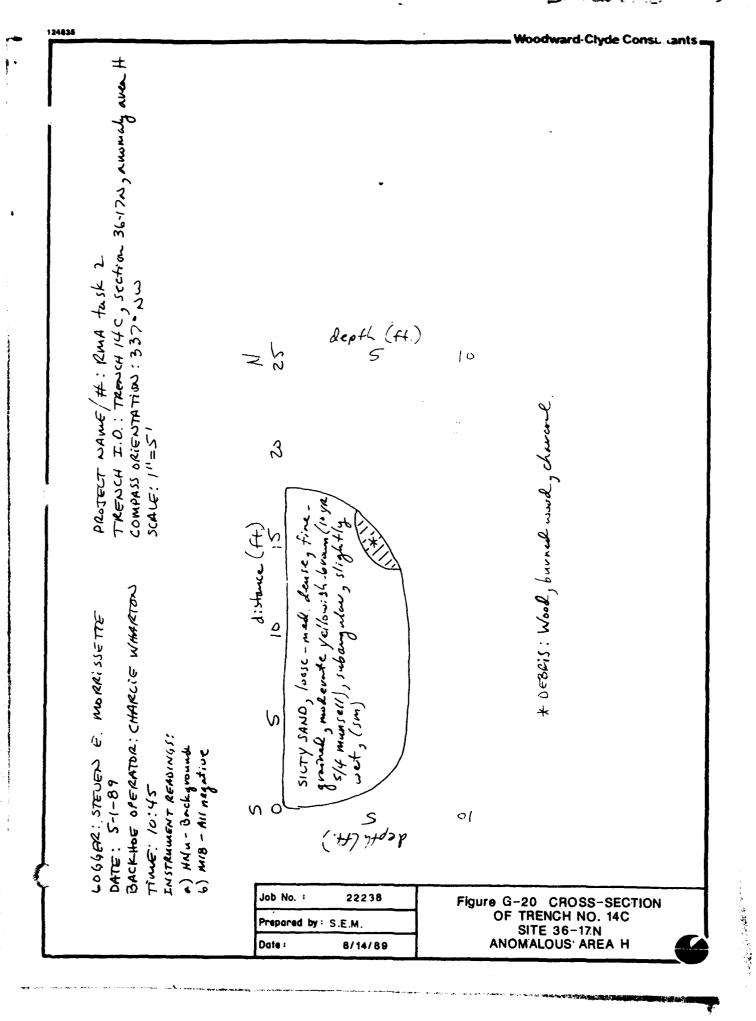
Date: 8/14/89

22238

Figure G-18 CROSS-SECTION OF TRENCH NO. 14A SITE 36-17N ANOMALOUS AREA H

6

4



Job No. : 22238

Prepared by: S.E.M.

Date: 8/14/89

Figure G-21 CROSS-SECTION OF TRENCH NO. 14D SITE 36-17N ANOMALOUS AREA H LOGGER: STEVEN E. MORRISSETTE

DATE: 5-5-89 BACKHOEOPERATOR: BUD THRIFT

Time: 10:00

INSTRUMENT READINGS:

a) HII u - 5-10 ppm around sludge, otherwise background

b) m-18 - All negative

PROJECT NAME / H. RMA to TRENCH I.D.: TRENCH 17, SE COMPASS ORIENTATION: 339° SCALE: /"=5'

ه 3

35

SILTY SAND, loose, fine-grained, well sorted, sub.

angular, moderate brown (5 yr 3/4 mansell), slightly wet

(5m)

WHITE

PHOSPHOROLY

10

* DEBRIS: SOME BURNED-OUT INCONDINGY CA' 19 SCHOGE

25

0

124835

matics's 2

NA 31, 17, SECTION 36-17N, West of an imaly area h

739° NW

Di STANCE (ft

35 40 45 5 55 60 65 70 75

SILTY SAND, louse, fine-grained, well sorted, subangular, moderate brown (5 x/R 3/4 munsell), slightly wet (SM)

DARCHSINGS, DARK GRAY & BLACK

Job No. :

Prepared by

Date :

75 80 65 70 use, fine-grained, well sorted, noderate brown (5 r/R 3/4 munsell), (SM)

90

85

80

0

N 95

2238

Job No. : 22238

Prepared by: S.E.M.

Date:

8/14/89

Figure G-24 CROSS-SECTION OF TRENCH NO. 17 SITE 36-17N ANOMALOUS AREA H

· Salve of the

LOGGER: STEVEN F. MORRISSETTE

DATE: 5-5-89

BACKHOE OPERATOR: CHARLIE WHARTON

TIME: 08:10

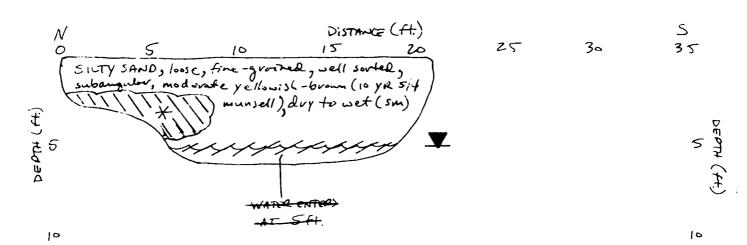
INSTRUMENT READINGS:

- a) HNu background
- 6) MIB All negative

PROJECT NAME/#: RMA task 2 TRENCH I.D.: TRENCH 16, SECTION 36-17N,

COMPASS ORIENTATION: 3440 NW

SCALE: 1"=5"



* DEBRIS: LARGE PIECES OF CONCRETE RUBBLE, BRICKS, SOME WIRE.

Job No. :

Prepared by: S.E.M.

222

Date:

8/14

PROJECT NAME/#: RMA task 2

TRENCH I.D.: TRENCH 16, SECTION 36-17N, West of ANOM AREA H

COMPASS ORIENTATION: 3440 NW

SCALE: 1"=5"

uce (ft) YR 5/4 -(sm)

25

10

RUBB'E, BRICKS, SOME WIRE.

22238 Job No. :

Prepared by: S.E.M.

Date: 8/14/89 Figure G-23 CROSS-SECTION OF TRENCH NO. 16

SITE 36-17N WEST OF ANOMALOUS AREA H

LOGGER: STEVEN E. MORRISSETTE DATE: MAY S, 1989

BACKHOE OPERATOR: BUD THRIFT

TIME: 08:30

INSTRUMENT READINGS:

5) MIR - All negative A) HNu - background

TRENCH I.D : TRENCH 18, section 36-17N, west of anomaly avea H PROJECT NAME /#: RWA task 2

COMPASSORIENTATION: 3400 SCALE: 1"= 5"

depth (f+) 3 SILTY SAND, loose, fine -growned, well-sorted, subangular, moderate yellwish-brown (10 yr 5/4 + distance (ft) 5

depth (++)

munsell), very wet to sature!
(Sm)

9

Note: Material becomes saturated upproximately 1.0 foot under the surface

Job No. : 22238 Prepared by: S.E.M. Date:

Figure G-25 CROSS-SECTION OF TRENCH NO. 18 SITE 36-17N WEST OF ANOMALOUS AREA H

APPENDIX H QA/QC DATA ANALYSIS

Woodward-Clyde Consultants

APPENDIX H QA/QC DATA ANALYSIS

QUALITY ASSURANCE - APPENDIX H

Trip Blanks - A trip blank was shipped with every cooler of samples sent to the laboratory.

A total of 29 trip blanks were analyzed for volatile organic compounds (VOC). Table H-1 is a complete listing of trip blanks from this program. Five of the trip blanks indicated the presence of chloroform and two of those eight also indicated the presence of acetone (ACET). The average concentration of chloroform detected in the five trip blanks was $46.6 \mu g/L$. The range in concentration reported in the trip blanks was from 2.3 to $66 \mu g/L$. The concentrations of chloroform and acetone in the samples corresponding to the trip blanks with detections of chloroform and/or acetone was less than the method detection limits for those analytes.

The source of the chloroform is believed to be the sampling crew. Chloroform for Army agent screening samples was with the sample crew for 7 out of 8 of the sampling activities that chloroform was indicated in the trip blank.

Field Blanks - Field blanks were collected at the rate of 1 per 20 water samples per area. A total of four field blanks were collected during the sampling program. Table H-2 is a complete listing of field blanks from this program. Two of the four field blanks indicated the presence of sodium. No other analytes were detected in the field blanks. The concentration of sodium indicated in the field blanks was 1,950 and 3,100 μ g/L in samples WC 89G-005 and WC 55G005, respectively. Very high concentrations of sodium were indicated in both of the associated groundwater samples, which were both sampled immediately prior to collecting the field blanks. The concentration of sodium in sample WC 89G001 was 1,800,000 μ g/L and in sample WC 55G001 it was 2,200,000 μ g/L. Based on the extremely high concentration in the groundwater samples it is likely that the concentration detected in the field blanks is a residual from the preceding groundwater sampling event.

Woodward-Clyde Consultants

Decontamination Rinsates

A total of 40 decontamination rinsates were collected during the field sampling program. Table H-3 is a complete listing of decontamination rinsates from the program. Decontamination rinsates were taken from each of the sample collection activities as listed below.

Sample Activity/Media	Number of <u>Decontamination Rinsates</u>
Groundwater Sampling	19
Boring Installation/Soil	11
Exploratory Trenching/Waste	7
ISV Sample Collection/Waste	_3
	40

Target analytes were detected in 23 out of 40 of the decontamination rinsates indicating that the decontamination procedures were not perfect. However, the concentration of analyte detected in the rinsate was generally less than 1 percent of the concentration detected in the associated samples indicating that decontamination was adequate for this program.

Duplicates

A total of 20 duplicate samples were collected during the field program. Table H-4 is a complete listing of paired sample and duplicate data. Duplicates were collected from each sample media as listed below.

<u>Media</u>	Total Samples	Number of Duplicates
Groundwater	35	6
Soil	47	11
Waste	<u>_18</u> 100	_ <u>3</u> 20

Woodward-Clyde Consultants

Comparative evaluation of the sample and duplicate analytical results indicates very good correlation and reproducibility for paired data in each of the media. The high degree of correlation indicates that the samples are representative of the actual condition at the site.

COMPLETE LISTING OF TRIP BLANGS

	1 1 100 1 1 metats		N.A.		N.A.		H.A.		N,A.		H.A.		H.A.		N.A.		R.A.		ત્ સ
	f I mercury		H.A.		R.A.		N.A.		N.A.		7. A.		N.A.		#.A.		N.A.		ď.
	larsenic i		R.A.		H.A.		R.A.		Z.A.		H.A.		N.A.		K.A.		N.A.		Ä,
	1 tapa/apa		¥. x		#.A.		R.A.		ж. У.		N.A.		N.A.		N.A.		N.A.		¥.
(RMA Detabase)	1 08018		Α.Α.		K.A.		N.A.		N.A.		Ä.A.		K.A.		H.A.		Ä.A.		A.A.
(RUMA	Office Control	(Jutian)	N.A.	(Julian)	R.A.	(Julian)	N.A.	(Julian)	K.A.	(Julian)	H.A.	(Jul lan)	N.A.	(Julian)	R.A.	(Julian)	Z.A.	(Julian)	٠ <u>٠</u>
	1 DBCP	Site type - WELL Sample Date - 89151 (jutian)	N.A.	Sample Date - 89164 (juilan)	N.A.	Sample Date - 89163 (Juitan)	N.A.	Sample Date - 89106 (Julian)	H.A.	Sample Date - 89166 (jullan)	N.A.	Sample Date - 89165 (Julian)	K.A.	Sample Date - 89131 (Julian)	H.A.	Sample Date - 89159 (juilan)	N.A.	Sample Date . 89124 (Julian)	ď.
	88	Site type - Well	R.A.	Site type - WELL	H.A.	Site type - WELL	H.A.	Site type - Well	#.A.	Site type - Well	n.A.	Site type - Will	H.A.	Site type - Well	N.A.	Site type - WELL	R.A.	Site type - Will	e'e
	88	Site 10 - 01504	R.A.	Site 10 - 36054	H.A.	Site 10 - 36056	N.A.	\$110 10 - 36075	H.A.	Site to - 36075	N.A.	Site to - 36076	N.A.	Site 10 - 36183	H.A.	SITE ID - 36187	H.A.	51te ID - 36187	A. A.
	i semi-volatilles	MDer - WOLADOA	H.A.	Mer - WC44034	#.A.	Mer - WC580004	R.A.		H.A.	Mer - W75034	K.A.		N.A.		N.A.		N.A.		1.0000 N.A. 1.0000 1.0000 1.0000 5.0000
	voiatiles	Fleid number - WCD40004 Site iD - 01504	1.7.	Field number - WC340034 Site ID - 36054	L.T.	field number - WCSecoot Site ID - 34054	1.1.	Fleid number - wc/50064	1.1.	field number - WCJSC334 SILe ID - 36075	1.1.	Acceptance field number - wc/6cool	1.1.	Fleid number - wcx35004	L.T.	Field number - WCI70004	1.1.	Field number - WC1/5004	1117G LT 1.0000 1127G LT 1.0000 110G LT 1.0000 110G LT 1.0000

L.T. - less than (value) N.A. - NOT ATRIVZED F - indicates filtered sample analysis

R - Rejected-out of control Units of measurement - Site type (WELL - U.C.) and (BOTE, WASS, CHPH - U.C.) see Appendix K for explanation of Field Tumber

DIO H-1 COMPLETE LISTING OF TRIP BLANKS

(RIM Database)

1921 1920 1921 1920 1921 1921 1921 1921 1921 1922	WHATILES		Sem!-volatiles	5 	<u> </u>	& 		- 050KS	New / New /	7 34015		
310 10 - 36109 3100 1000 - 2610 3100 1000 - 2610 510100 - 2610 5100 - 2610 5100 - 2610 5100 - 2610 5100 - 2610 5100 - 2610 510					· - -		· - -					
		WCB75004	(p. luco)									
#1. #4. #4. #4. #4. #4. #4. #4. #4. #4. #4	מנ וו	1.0000 1.0000										
Site 10 - 3459 Site 100 - 1011 Sample Date - 8750 (Julian) H.A.	- g	1.0000 0.000										
Site 10 - 34169 Site 1560 - WELL SANDIA DATE - 87526 (Julian) N.A. N.	٦ ٩ ٢٠	. 8000										
	=	4.8000										
Site ibe - well Sample Date - series (julian)	5 ! • !	1.0000										
Site 10 - 38169 Site type - WELL SAMPLE DATE - 89154 Cjulish) W.A. W.A. W.A. W.A. W.A. W.A. W.A. W.A		3.300										
Site 10 - 3659 Site 1900 - WELL Sample Date - 89150 Cjulish) N.A. N.A	<u>.</u>	8 .										
Site 10 - 36169 Site 1600 - WELL SAMPLE DATE - 29154 (Julian) N.A.	בי פע	9 5										
Site ID - 36169 Site Ispe - WELL SAMPLE DATE - 89326 (JULIAN) M.A. M.A. M.A. M.A. M.A. M.A. M.A. Site ID - 36159 Site Ispe - 8036 Sample Date - 89106 (Julian) M.A. M.A. M.A. M.A. M.A. M.A. M.A. M.A. Site ID - 36199 Site Ispe - 8036 Sample Date - 8910 (Julian) M.A.		88.5										
Site 10 - 34199 Site 1500 - WELL Sample Date - 89154 (Julian)		900										
Site 10 - 34169 Site 1ype - WELL Sample Date - 89154 (Julian) H.A. H.A. H.A. H.A. H.A. Site 1ype - WELL Sample Date - 89154 (Julian) Site 10 - 34190 Site 1ype - BONE Sample Date - 89104 (Julian) H.A. H.A. H.A. H.A. H.A. Site 10 - 36190 Site 1ype - BONE Sample Date - 89104 (Julian) H.A. H.A. H.A. H.A. H.A.	5	1.0000										
Site 10 - 36169 Site 1500 - WELL Sample Date - 89150 (JULIAN) N.A.		1.000										
516 10 - 36169 516 1500 - WELL Sample parto - 69156 Cjulian) N.A.		1.0000										
# # # # # # # # # # # # # # # # # # #	7	1.0000										
Site 10 - 36169 Site 1000 - WELL Sample Date - 89136 (Julian) M.A. M.A. M.A. M.A. M.A. Site 10 - 36190 Site 1000 - 800E Sample Date - 8910 (Julian) M.A. M.A. M.A. M.A. M.A. Site 10 - 36190 Site 1000 - 800E Sample Date - 89110 (Julian) M.A. M.A. M.A. M.A. M.A.	=	14.0000										
Site 10 - 36169 Site type - WELL Sample Date - 89136 (Julian) N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A	5	1.2000										
Site 10 - 36169 Site 1500 - WELL Sample Date - 89139 (Julian) N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A	5	11.0000										
Site 100 - 36189 Site 1ype - WELL Sample Date - 89156 (julian) N.A. N.A. N.A. N.A. N.A. N.A. Site 100 - 36199 Site 1ype - BORE Sample Date - 89100 (julian) N.A. N.A. N.A. N.A. N.A. N.A. Site 100 - 36190 Site 1ype - BORE Sample Date - 89110 (julian) N.A. N.A. N.A. N.A. N.A. N.A.		23.0000										
Site 10 - 3669 Site type - WELL Sample Date - 89156 (Julian) N.A.	7 SE	1.0000										
Site 10 - 36169 Site 1100 - WELL Sample Date - 69156 (Julian) N.A. N.A. N.A. N.A. N.A. Site 10 - 36190 Sample Date - 69106 (Julian) N.A. N.A. N.A. N.A. N.A. Site 10 - 36190 Sample Date - 69100 (Julian) N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A.	CAR LT	1.000										
Site 10 - 36189 Site type - WELL Sample Date - 89158 (Julian) N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A		2.000										
Site to 36169 Site type - WELL Sample Date - 89156 Cjulian) N.A. N.A. N.A. N.A. N.A. Site to 36190 Site type - 800E Sample Date - 89106 Cjulian) N.A. N.A. N.A. N.A. N.A. Site to 36190 Site type - 800E Sample Date - 89110 Cjulian) N.A. N.A. N.A. N.A. N.A.		88.										
Site 10 - 36189 Site 1908 - WELL Sample Date - 69159 (julian) N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A	; 5	10.000										
Site to - 36169 Site type - WELL Sample Date - 89156 (Julian) N.A. N.A. N.A. N.A. N.A. Site type - BORE Sample Date - 89100 (Julian) N.A. N.A. N.A. N.A. Site type - BORE Sample Date - 89110 (Julian) N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A.	5	1.400										
Site to - 36169 Site type - WELL Sample Date - 89156 (Julian) N.A. N.A. N.A. N.A. N.A. Site type - BORE Sample Date - 89100 (Julian) N.A. N.A. N.A. N.A. Site type - BORE Sample Date - 89110 (Julian) N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A.	_	1.5000										
Site to - 3619 Site type - WELL Sample Date - 89156 (julian) N.A. N.A. N.A. N.A. N.A. Site type - WELL Sample Date - 89156 (julian) N.A. N.A. N.A. N.A. Site type - BORE Sample Date - 89110 (julian) N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A.		1.000										
Site type - WELL Sample Date - 89156 (Julian) N.A.		1.000										
site to - 36169 site type - wtt. sample Date - 69156 (Julian) N.A. <td< td=""><td></td><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>		7										
N.A. N.A. <th< td=""><td>£</td><td>eld number -</td><td></td><td>Site to - 36189</td><td>SHE INDE - WELL</td><td></td><td>(Julian)</td><td></td><td></td><td></td><td></td><td></td></th<>	£	eld number -		Site to - 36189	SHE INDE - WELL		(Julian)					
Site to - 36190 Site type - BORE Sample Date - 89106 (Julian) N.A. N.A. N.A. N.A. Site 1D - 36190 Site type - BORE Sample Date - 89110 (Julian) N.A. N.A. N.A. N.A.		H.A.		H.A.	N.A.	N.A.	Z. A.	N.A.	N.A.	K.A.	H.A.	H.A.
N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A.	11	eld number -		SI te 10 - 36190	Site type - BORE	Sample Date - 89104	(juillan)					
SITO ID - 36190 SITO (1900 - BOOKE SAMPLE DATE - 89110 (Julian) N.A. N.A. N.A. N.A. N.A. N.A. N.A.		R.A.		R.A.	H.A.	N.A.	N.A.	H.A.	H.A.	R.A.	N.A.	N.A.
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M.A. M.A. N.A. N.A. N.A. N.A. N.A.	FI4	eid number -		Site 1D - 36190	Site type - BORE	Sample Date - 89110	(Julian)					
		R.A.		#,A	M.A.	Z. A.	N.A.	N.A.	N.A.	R.A.	N.A.	H.A.
The same with the contract of					The state of the s	Section 100 Decimands	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	OUT OILS . INC.				

 L,T_{\star} , less than (value) $_{\rm N}$ A. - Not Aralyzed $_{\rm F}$ - indicates filtered sample analysis

R - Rejected-cut of control units of measurement - site type (WELL - U.C.) and (BORE, WASS, CHPH - U.C.) see Appendix K for explanation of field number

COMPLETE LISTING OF TRIP BLANKS

(RMA Database)

volati ies		Semi-volatilles	550	§	000	dana/dana	8 CBS	van/vani	larsenic 	F I MOTOLTY	r 10° metafs 0
-	'leid nabe	F - WC916204	Fleid muther - WC910204 Sile ID - 36191	Site type - BORE	Sample Date - 89163 (jullan)	(jul lan)					
t. f.	2	N.A.	N.A.	H.A.	N.A.	K.A.	N.A.	N.A.	N.A.	N.A.	R.A.
	'leid rumba	H - WC925194	fleid number - WC923194 Sile ID - 36192	Site type - Well	Sample Date - 89137 (jullan)	(Julian)					
r. r.	=	M.A.	#.A.	H.A.	N.A.	K.A.	K.A.	K.A.	H.A.	N.A.	#.A.
-	Pleid numbe	H - WC935004	fleid number - WC935004 Sile ID - 36193	Site type - Will	Sample Date - 89136 (juilan)	(puttan)					
r:	=	N.A.	H.A.	H.A.	N.A.	R.A.	K.A.	N.A.	N.A.	R.A.	H, A.
	iteld numbe	H - WC940004	fleid number - WC940004 Site ib - 36194	site type - well	Sample Date - 89194 (julian)	(julian)					
ij	z	N.A.	H.A.	7.A.	N.A.	M.A.	κ.Α.	N.A.	N.A.	ж.	K.A.
	Teld number	H - WC945004	fleid number - WC945004 Site iD - 36194	Site type - BORE	Sample Date - 89166 (julian)	(julian)					
ij	*	H.A.	R.A.	H.A.	N.A.	N.A.	M.A.	N.A.	N.A.	H.A.	H,A.
	rield numbe	H - W015004	Fleid fumber - WCb15004 Site 10 - 3470EHCHD1	HONDI SITE TYPE - BORE	Sample Date - 89142 (julian)	(Julian)					
1.1	×	N.A.	H.A.	R.A.	N.A.	N.A.	Z.A.	K.A.	K.A.	K.A.	N.A.
-	Fleid numbe	Fleid number - WCD23004	SILE ID - 36TRENCHD2	NO-02 SITE Type - BORE	Sample Date - 89143 (julian)	(m114n)					
£.	z		H.A.	N.A.	4.	N.A.	R.A.	R.A.	ж.ъ.	N. A.	N.A.
	Pletd number	Y - WCDZWD64	Fleid number - WOZWOO4 Site ID - 36TRENCHO2	WORDZ SITE TYPE - MASS	Sample Date - 89115 (julian)	(nellen)					
1.1	z	N.A.	H.A.	R.A.	N.A.	N.A.	#.A.	K.A.	R.A.	R. A.	#; ¥
	ield name	1 - WCD9WDD4	Pield number - WCOSWOOA SILE ID - 36TRENCHO9	4040 - WASS	Sample Date - 89117 (jullan)	(julian)					
1117G LT 1127G LT 110G LT 110QE LT	1.0808 1.0808 1.0808 1.0808 5.0808	<u>.</u>	ž. K	R.A.	ď.	₹. 2	₹	₹	₹ #	٠ <u>٠</u>	Ý.

L.T. - less them (walue) M.A. - Not Amilyzed F - Indicates filtered semple analysis

R - Rejected-out of control units of measurement - site type (WELL - UG.) and (BOME, WASS, CHPM - UGC) See Appendix K for explanation of Field Tumber

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DIO H-1 COMPLETE LISTING OF TRIP BLANGS

(RM DE (abese)

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larsenic 1 1		
Agenty I		
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damo/darjo 1		9130 (Julian)
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<u> </u>		Site type - Wiss
S		Site 10 - 34TRENOHI6
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R - Rejected-cut of control units of measurement - Site type (WELL - UCL) and (BOME, WASS, CHPM - UCC) see Appendix K for explanation of field number

COMPLETE LISTING OF TRIP BLANCS

(RMA Database)

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	30	WC16WD04 (CONT. 0)									
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130CLB LT	±.000										
1300	4.8000										
13000	1,000										
Jain II	3.5000										
ACET LT	9 .0000										
ACTIVIO LT	8. 4000										
MOCH LT	1.000										
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L.T. - less than (value) M.A. - Not Aralyzed ℓ - indicates filtered sample analysis

R - Rejected-cut of control Units of measurement - Site type (WELL - U.C.) and (BOTE, WASS, CHPM - U.C.) see Appendix K for explanation of Field number

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CONFLETE LISTING OF TREP BLANCS

(RMA DRIBBASE)

- volatiies	-	! Semi-volatiiles i	1 665	5	5 8 	20 SS	varvani i	iArsenic I F	F 1 Mercury 1 I	F 100
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200	1.000									
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מפס וו	1.200									
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coo	9 .800									
age 17	1.9000									
DEMOLIN LT	1.6000									
בן	2.000									
FTOWS LT	.8									
MECHAE LT	- 8									
MK LT	10.900									
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------ field fumber - WCISWerd Site 10 - m-115/WASS Site type - WASS Sample Date - 69126 (Julian)

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A.A. A.A. 1117G LT 1127G LT 1150G LT 1250G LT 1250G LT 1250G LT R - Mejecied-cui of control Units of measurement - Site type (YELL - UCL) and (BOME, WASS, CHPH - UCC) see Appendix K for explanation of field number L.T. - less than (veite) N.A. - NOI Amilyzed f - Indicates filtered sample analysis

COMPLETE LISTING OF TRIP BLANCS

(RMA DALADASO)

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Site 10 - HIBOREODA SITE LYDE - BOXE SAMPLE DATE - 89150 (AVITAN) N.A. N.A. N.A. N.A. N.A. N.A. N.A. N.A	Field		Site ID - MIBOREDO7	Site type - #455	Sample Dele - 89142	(Julien)					
Site 10 - INBORECOG SITE Type - BONE Sample Date - 89150 (Fullan) N.A. N.A. N.A. N.A. N.A. N.A. N.A.	Ŀ	H.A.	H.A.	R.A.	R.A.	N.A.	R.A.	N.A.	N.A.	H.A.	A.A.
N.A. N.A. N.A. N.A. N.A. N.A. N.A.	DIB14		Site 10 - MBCREGOS	Site type - BORE	Sample Date - 89150	(Julien)					
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COMPLETE LISTING OF TRIP BLANKS

(RUM DETADASE)

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du pieid ma	er - wcoewo34	Field rumber - WCD6W034 Site ID - MIBOREGOS	Site type . WASS	Sample Date - 89145 (juilan)	(Jut lan)					
1.1.	H.A.	7. A	K.A.	#, *	N.A.	R.A.	N.A.	H.A.	M.A.	K.A.
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t.f.	K.A.	R.A.	R.A.	R.A.	N.A.	H.A.	N.A.	H.A.	#.A.	ď.

YZBG R - Rejected-cut of control Units of measurement - Site type (WELL - U.Q.) and (BOME, WASS, CAPM - U.G.) see Appendix K for explanation of rield number

L.T. - less then (welve) N.A. - Nol Armiyzod $\mathfrak F$ - indicates filtered sample armiysis

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A biold	fletd number - wc5cnos		\$11e 10 - 36055	Site type - WELL		Sample Date . 89164 (jullan)	- 89164	(Julian)														
ij	ij	912 C765 C7650 C76502 DI TH BI TH C605 C605	555555	5.0000 ALDM LT 5.6900 CL6/P LT 11.5000 CLDM LT 7.4000 DLDM LT 1.3400 DRDM LT 1.3400 DRDM LT 1.3400 DRDM LT 2.3400 PTDD LT 2.3400 PTDD LT 2.3400 PTDD LT 2.3400 PTDD LT	0.0500 0.0500 0.0500 0.0500 0.0500 0.0510				LT 0.3920 LT 0.1880	TO DO DO DO DO DO DO DO DO DO DO DO DO DO	5	6.6900 N.A.		3 3	55	2.3500 £	ā ā	55	. 1000	4358×686	555555 55	50.0000 34.0000 35.0000 26.0000 26.0000 27.0000 21.0000
n blots	Fleid number - WCB9005		Site 10 - 34189	Site type - WELL		Sample Date - 89156 (julian)	- 49154	(Julian)														
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n bield	fleid number - wcszcoos		Site 10 - 36192	Site type - WELL		Sample Date - 89164 (juilan)	- 89164	(Julian)														
; ;	ij	C PRESCO	555555	8,0000 ALDM LT 8,4900 CL6CP LT 11,5000 CLDM LT 1,3400 DLDM LT 1,3400 DLDM LT 0,5500 1500R LT 2,3400 PYDDE LT 2,3400 PYDDE LT	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5	0.1950 DI		LT 0.3920 LT 0.1860	Togat .	5	6.690 FCA	222	100 .0000 AS 100 .0000 100 .0000	5	2.3500	¥	5	. 1000	5853 * 2 1 2	5555555	66 .000 24 .000 26 .000 26 .000 26 .000 27 .000
نه ب	L.T less then (value) N.A F - Indicates (litered sample analysis	(value) ered sam	N.A. Ie and Vs	N.A MOL AMBIYZOG MEIYSIS	- W	R - Rejected-cut of control units of measure see Appendix K for explanation of field number	of contri	5 5	ts of mon rietd num	Surement	· 51 [6 ¢	YDG CWELL .	(B)	Units of measurement - Site type (WELL + UQL) and (BOME, WASS, CHPH + UGC) of field number	SS. Carr	99						

i semi-volatiles i

I votatiles

(p. jua) (caut .q)

SADIO H-2 COMPLETE LISTING OF FIELD BLANKS

(RM Database)

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F I mercury	
JATSONIC 1	
1 1864/MPA	
1 05/018	
Gamo/Gario	
d580	
500	

R - Rejected-cut of control Units of measurement - Site (upe (WELL - UCL) and (BORE, WASS, CAMM - UCC) See Appendix K for explanation of field number

L.T. - less then (value) N.A. - Not Aralyzed $\mathfrak F$ - indicates filtered sample aralysis

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Table H-3 COMPLETE LISTING OF RINSATES

(RMA Database)

Volatiles Semi-Volatiles OSCS OCPS OCPS OCPS	Date - 89152		8008	I IMPA/MPA	JArsenic		-	Mercury		7	;	
Site 10 - 01503 Site 1ype - WELL M.A. M.A. M.A. Site 10 - 01504 Site 1ype - WELL M.A. M.A. Site 10 - 34054 Site 1ype - WELL	10 Date - 89152 CJUI A. N.J.						- 1			1 I motals	_	
Site 10 - 01503 Site 1100 - WELL N.A. N.A. N.A. Site 10 - 01504 Site 1100 - WELL N.A. N.A. Site 10 - 34054 Site 1100 - WELL	10 Date - 89152 (Jul A. N.J 16 Date - 89123 (Jul A. N.J											1
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site 10 - 01504 Site 1500 - WELL M.A. M.A. M.A. Site 150 - 34054 Site 1700 - WELL	10 Date - 89123 (jul A. N./		ن	₹. .	3 3 	17 2.1	2.3500 HG 2.3500 F HG	55	0.1000 0.1000 f	F.		
N.A. N.A. Sile ID - 36054 Sile IVDe - WELL SA		(u a l)										
Site 10 - 36054 Site type - WELL		R.A.	ند	R.A.	2	5.7	2.3500 HG	5	0.1000	K.A.		
	19 Date - 89164 (Julian)	lan)										
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R - Rejected-cut of control units of measurement - Site type (WELL - UCL) and (BORE, WASS, CHPM - UCC) see Appendix K for explanation of field number

Table N-3 COMPLETE LISTING OF RINSATES

(RNA DETABLESE)

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n bield	8	Site 10 - 34067	Site type - WELL	Sallo	Date - 89117 (Julian)								
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L.f. - fess then (value) M.A. - Not Analyzed ${\bf F}$ - Indicates fillered sample analysis

R - Rejected-Out of control Units of Measure see Appendix K for explanation of field number

DIE H-3 COMPLETE LISTING OF RINSATES

(RMA Database)

Semi-volatiles 0.000 1.0	55	§ .	200 80	Character of the control of the cont	86.03	NAVAWA	LAT Senic	F I mercury	0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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Site type - Will Sample Date - 89157 (Julian) ------ fleid number - WC/50023 Site 10 - 36075

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 $L,T_{\rm c}$ = 1625 then (value) $_{\rm N},A_{\rm c}$ = Not Amily2ed f - indicates illitered sample analysis

R - Rejected-cut of control units of measuriment - Site type CMELL - UG.) and (BORE, WASS, CMPH - UGG) see Appendix K for explanation of field number

abie H-3 COMPLETE LISTING OF RINSATES

(RMA Database)

5853×¥ 0.1000 5 _ LT 100.0000 AS LT 100.0000 LT 100.0000 6.6900 FCJA (JAPA HAPA 0.3930 TDCCL LT 0.1880 55 Site type - WELL Sample Date - 89121 (Juilan) 0.1950 DIMP = 5.0000 ALDIEN fleid number - WCB0CD03 Site ID - 36080 :۔ ۳

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0.0500 DBCP 0.0460 0.0950 0.0500 812 11 CMS 11 CMS0 11 CPMS 02 1.1 01 TH LT 0MOS LT

R - Rejected-cut of control Units of measurement - Site type (WELL - U.C.) And (BORE, WASS, CHPH - U.C.) See Appendix K for explanation of field number N.A. - NOT AMINZED

L.T. = less (non (value) N.A. * F - indicates filtered sample analysis

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OMPLETE LISTING OF RINSATES

(RMA Detabase)

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1014	s roomers - wascoos si	\$11e ID - 36068		Site type - WELL		Sample Date - 89116 (jullan)	Cjullan										
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3	L.T less then (value) N.A F - Indicates fillered sample analysis	•	N.A NOT AMBIYZGO Maiysis		t - Rejecte iee Appendi	R - Rejected-nut of control See Appendix K for explanati	8	of measurement -	UNIES OF MERSULFEMENT - SIEG ENDO (WELL - UGL) AND (BOTE, WASS, CAPH - UGC) Of Field number	1 - UCL) AND (BO	PE. WASS. O	(32) · HE			i	;	

ADIO M-3 COMPLETE LISTING OF RINSATES

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(RMA Database)

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Site type - WELL Sample Date - 89158 (julian)

----- field rusber - WCB6CD03 Site ID - 36188

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R - Rejected-out of control Units of measurement - Site (WPELL - UZ.) and (BORE, WASS, CUPM - UCC) See Appendix K for explanation of Field number

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ADIG H-3 COMPLETE LISTING OF RINSATES

(RMA Detabase)

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R - Rejected-cut of control Units of measurement - site type (MELL - UG.) and (ROME, WASS, CHPH - UGG) See Appendix K for explanation of field number

DIMP 1.6900 TDCCL LT 6.6900 N.A.

0.0500 N.A. 0.0460

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1117G LT 1.0000 L.T. 1127G LT 1.0000

L.T. + less then (value) M.A. - NOT ArmivZed ${\bf f}$ - Indicates fillered sample armivs:s

COMPLETE LISTING OF RINSATES

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							(RMA Database)					
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Site type - WELL Sample Date - 89156 (julian) ------ field number - WC900003 Site to - 36190

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L.T. - less than (value) N.A. - NOt Analyzed F - Indicates Illiered sample analysis

R - Rejected-out of control Units of measurement - Site type (WELL - UG.) and (BODE, WASS, CMPH - UCC) See Appendix K for explanation of field number

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COMPLETE LISTING OF RINSATES

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R - Rejected-out of control units of measurement - Site type (WELL - U.Q.) and (mont. WMSS, CMPH - UCC) see Appendix K for explanation of field number

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ADIO H-3 COMPLETE LISTING OF RINSATES

(RMA Database)

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R - Rejected-cut of control Units of measurement - Site type (WELL - UCL) and (BOME, WASS, CUPM - UCC) See Appendix K for explanmation of field number

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JOHN COMPLETE LISTING OF RINSATES

								5	(RMA Detabase)	=										
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9 NO. 12

ADIO H-3 COMPLETE LISTING OF RINSATES

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Site D - 34193 Site 1900 - BOTE Sample Date - 69156 (MC926193 (CONT. 12)		5555	5.6900 7.4600 1.3400 2.3600							1 100.000					85328458	*******	8 . 4000 24 .0000 25 .0000 60 .0000 74 .0000 27 .0000
Site 10 - 34144 Site 1490 - Bode Sample Date - 69144 (Julian)		Fleid number - WC935123		. 36193	\$110	type - BORE		19136 (Julian)											
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#12 LT 5:0000 ALDM LT 0.0500 DBCP LT 0.1950 DIMP LT 0.3930 TDCL LT 6.6900 M.A. AS LT 2.3500 HC LT CPMS LT 5:6900 CLCP LT 0.0500 DBMP LT 0.1880 CPMS LT 5:6900 CLCP LT 0.0500 CPMS LT 1:3000 CLDM LT 0.0500 DITH LT 1:3000 EDDM LT 0.0500 DITH LT 1:3000 EDDM LT 0.0500 DITH LT 1:3000 EDDM LT 0.0500 DMDS LT 0.5900 ISOMR LT 0.0500 DMDS LT 0.5900 ISOMR LT 0.0500 DMDS LT 0.5900 ISOMR LT 0.0500	ij	Ś		-	5.000 ALO 5.490 CLO 11.300 BLO 11.300 BLO 11.300 BCO 0.350 PPO 2.300 PPO		500 500 500 500 500 500 500 500 500			5	6. 6900 M.A.			•	55	6. 1000 F	58522222	2 - 2 4 6 6 7 2 2	2
1 1,0000 1, 1 1,0000		rield number - wcsocool		- 36590	Site	INDO - WELL	Sample Date - 6	ense (julian)											
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 t,T, \cdot less then (value) H.A. \cdot NOI Analyzed r - indicates filtered sample analysis

R - Rejected-out of control units of measurement - site type (WELL - UQ.) and (BDRE, WASS, CMPH - UGD) see Appendix K for explanation of field number

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COMPLETE LISTING OF RINSATES

(RMA Detabase)

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DBCP LT 0.1950 N.A. Æ.A

R - Rejected-cut of control Units of measurement - Site type (MELL - UCL) and (BOME, WASS, CHPH - UCC) see Appendix K for explanation of field number

L.T. - fess than (value) M.A. - Not Antiyzed f - indicates filtered sample analysis

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TOWPLETE LISTING OF RINSATES

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 $L,T, \rightarrow 1655$ then (value) N.A. \rightarrow Not Analyzed $F\rightarrow 1001$ cates fillered sample analysis

R - Rejected-cut of control units of measurement - Site type (Will - U.C.) and (BORE, WASS, CMPM - U.C.) see Appendix K for explanation of Field number

JIO M-3 COMPLETE LISTING OF RIMSATES

(RMA Detabase)

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...... field number - WCD.Ambog Site ib - 36TRENCHO4 Site type - WASS SAUDIE Date - 89116 (juillan)

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 $t,T, \ \, = 1653$ then (value) $\mbox{M.A.} \ \, = M01$ Analyzed $f \ \, = 1701 (cates filtered sample analysis$

- ye J. .

R - Rejected-cut of control units of measurement - site type (will - UG.) and (BCME, WASS, CMPH - UGC) See Appendix K for explanation of field number

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SIG H-3 COMPLETE LISTING OF RINSATES

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fleid rumber - wco50003		SILE ID - 36TRENCIOS SILE LYPE - WASS	is soons	10 type -		pie Date	Sample Date - 49124 (julian)													
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-	r - indicates fillered sample analysis	9	. SISA	:	See A	pendix K	lor expian	5	id rumber											

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ADIO H-3 COMPLETE LISTING OF RINSATES

(RMA DB (abase)

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	(P. Juoo) (com6ao)											ă	5	22.000
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R - Rejected-cut of control units of measurement - 51te type (Will - UG.) and (BORE, WASS, CHPH - UGC) see Appendix K for explanation of field number

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IN H-3 COMPLETE LISTING OF RINSATES

(RMA Database)

	Date - 69139 (Jullan) LT 0.1950 Diag LT Date: LT	0.3920 TDGCL LT 6.6900 M.A.	AS (1 2.3500	HG 0.1.00	3 8 5 3 ± 2 € 5	17 500.0000 17 34.0000 17 28.0000 17 59.0000 17 74.0000 11 74.0000
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R . Rejected-out of control Units of measurement - Site type (Will - UCL) and (BORE, WASS, CHPM - UCC) See Appendix K for explanation of field number

DIMP LT 0.3920 TDGCL LT 6.6900 N.A.

0.0500 N.A.

1111CE LT 1.0000 124TCB LT 1.8000 BTZ LT 5.0000 ALDRM LT

L.T. - less then (value) $\mbox{\ M.A. - Not Analyzed}$ $\mbox{\ fillered sample analysis}$

100.

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OMPLETE LISTING OF RINSATES

(RMA Database)

4.400 24.900 26.900 96.900 96.900 74.900 21.900

	CPUS IT 5.4900 CLONN IT 0.0950 CPUSO IT 11.5000 CLONN IT 0.0500 CPUSO IT 7.4600 ENGIN IT 0.0500 DITH IT 1.3400 INDOM IT 0.0540 GMAT IT 2.3800 PPUOT IT 0.0490	9	CONS 11 CONS 1			5	g		850 2 2 2 2 8
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1,0000 202P LT 14,0000 202P LT 17,0000 202P LT 17,0000 20P LT 17,0		5	• •						
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1,0000 28F LT 1,0000 28W LT 2,0000 28W LT 1,0000 28P LT 1,0000 28P LT 1,0000 28P LT 1,0000 28P LT 1,0000 46PP 10 1,0000 46PP 10 1,0000 46PP 10 1,0000 46PP 10 1,0000 46PP 10 1,0000 46PP LT 1,0000 46PP LT 1,0000 46PP LT 1,0000 46PP LT 1,0000 46PP LT 1,0000 46PP LT 1,0000 46PP LT 1,0000 46PP LT		5	9						
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11 2,000 24		=	9						
LT 1.0000 349 LT LT 1.0000 3300MH LT LT 1.0000 340HL LT LT 1.0000 460HZ NO LT 1.0000 460HZ NO LT 1.0000 460HZ LT LT 1.0000 461HZ LT LT 1.0000 461HZ LT LT 2.0000 461HZ LT 480 LT		=	9						
1,0000 330030 HD 10,0000 344HL LT 1,0000 460HZ HD 1,0000 460HZ HD 1,0000 462HL LT 1,0000 462HL LT 2,0000 462HL LT 4,44FL LT 4,		5	•						
10.0000 3MMIL LT 1.4000 460V2C ND 1.5000 460V2C ND 1.0000 4CJNL LT 2.0000 4CJNC LT 2.0000 4CJNC LT 4.0000 4CJN		5	9						
1,4000 46042 NO 1,5000 48091 LT 1,0000 4C34 LT 2,0000 4C34 LT 2,0000 4C34 LT 440 LT			9						
1.5000 48897E ND 1.0000 4CM11 LT 1.0000 4CL3C LT 2.0000 4CL3C LT 4CL99E LT		9	•						
1,0000 ACM11 LT 1,0000 ACLSC LT 2,0000 ACLSC LT ACLPPE LT AMP LT		CHEPTE NO	9						
1.0000 #0.3C LT 2.0000 #0.3C LT #41PFE LT		ACMIL LT	9						
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eap 17 2.6000			P						
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L.T. - less them (value) M.A. - MOI Amaly2ed R - F - Indicates filtered sample amalysis See

R - Rejected-out of control units of measurement - site type (WELL - UQ.) and (Book, WASS, CMPH - UGG) see Appendix K for explanation of field number

JIO M-3 COMPLETE LISTING OF RIMSATES

(RMA Detabase)

1 volatilies	j semi-volatilles		25	1 00%	-D80	1 05CMS	INPA/MPA	IArsenic	F Mercury	5
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		5.1000								
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	_	4.8000								
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	ş	2.4000								
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	200	2.500								

L.T. - less then (value) $_{\rm M.A.}$ - Not Arkiyzed f - indicates fillered sample arkiysis

R - Rejected-out of control Units of measurement - Site type (WELL - UCL) and (BORE, WASS, CMPH - UCC) see Appendix K for explanation of Field number

i volatiles

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JIO M-3 COMPLETE LISTING OF RINSATES

(RMA DELEDASE)

	Sami-Volatiles		- 08CS	508	1 08Cb	dama/daya	66045	I MPA/MPA	farsenic	f Mercury	0
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	FLARBAE LT	3.7000									
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	TJ VARDAN										
	ON ASSESSED										
	DEAT LT										
	POBO16 NO										
	PCB221 NO										
	PCB232 ND										
		30.000									
	POB248 NO										
	PORSA NO	36 .0000									

L.T. - less than (value) M.A. - NOt Analyzed \mathbf{f} - indicates filtered sample analysis

R - Rejected-out of control units of measurement - Site type (WELL - UQ.) and (BOME, WASS, CMPH - UGC) see Appendix K for explanation of field number

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ADÍO M-3 COMPLETE LISTING OF RINSATES

(RMA Delebase)

	20 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		Ç	§	È 8	8008 	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	IArsenic +	f I wercury	
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		9.1000								
	PRINCE LT	9.3000								
		2.2000								
		4.0000								
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		4.000								
		9.200								
		9.0000								
		7.9000								
		3.8000								
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		• .0000								

1.2000 BTZ	HG 2.7000	5	CR LT 24.6000			MC LT 500.0000		FB LT 74.0000	23.5000											
1.3000 BTZ	AS 5.3400																			
1.2000 BTZ																				
1.3000 BTZ	0.3920 TDCCL LT	0.1880																		
1.3000 BTZ	٦	5																		
1.3000 BTZ	N.A.		.0620	.0500	0.0510	0.0540	0670													
1.2000 BTZ	ALDRIN LT	משא נו	DI, CHEN	ENDRN LT	ISODR LT	11 3004	11 1004													
1.0000 812 LT 1.7000 CPMS LT 2.0000 CPMS LT 1.7000 DITM LT 1.7000 DITM LT 1.7000 DITM LT 1.7000 DITM LT 1.7000 DITM LT 2.0000 2.0000 2.9000 2.9000 3.6000 4.4000 2.9000 6.4000 6.7000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000 776.0000	5.0000	5.6900	1.5000	7.4600	1.3400	0.5500	2.3800													
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1247G LT 1.8000 B 12000 B 12000 B 1.7000 C 120	112	2	9	200	¥1. ×	8	MAT													
	. 8000	1.7000	2,0000	.7000	1.7000	1,7000	\$.2000	2,8000	4, 2000	3.6000	2,9000	8.4000	S. 8000	4,4000	21.0000	76.0000	. 5000	0.7400	0.9900	2.8000

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R - Rejected-cut of control units of measurement - Site type (WELL - UQ.) and (Book. WASS, CAPH - UCC) see Appendix K for explanation of field number

L.T. * less than (value) N.A. * NOT AmilyZed ${\it F}$ - indicates filtered sample analysis

.10 M-3 COMPLETE LISTING OF RINSATES

(RMA Database)

_	Somi-volatiles		558	80	4080	06OHS	IMPA/MPA	jarsenic I	F I MPFCUTY	r - 1 0 - 1 - 1 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
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		2.700								
	_	200.								
	5	3.7000								
	5	6.2000								
	330CED NO	12,0000								
	MANIL LT	4.900								
	MEDNIC ND	17.0000								
	S	4, 2000								
	4CMIL LT	7.3000								
	אמאכ נו	4.0000								
	40.30 17	. 5000								
	ADPE LT	S. 1000								
	5 1	0.5200								
	=	3.8000								
	AMMIL LT	5.2000								
	1	12.0000								
	5	₩.0000								
	ABIK: NO	4.000								
	ACR.OR NO	5,1000								
	AEMSLF ND	9.2000								
	ALDRA NO	4.700								
	ALDRE LT	13.0000								
	AULTINE LT	1.7000								
	MAPY LT	9.5000								
	ANTIRC NO	9.500								
	ATZ LT	2 . 900								
	B2CEXH LT	1.5000								
	BOCINE LT	\$.3000								
	BOCLEE LT	1.9000								
	BZEHP ND	4.8000				•				
	GA MTHAMB	1.6000								
	ON THUM	4.7000								
	BEANT NO	5.4000								
	38	4.000								
	125	3.4000								
	BENSLF ND	9.2000								
	OK OIZNO	10,000								

R - Rejected-out of control units of measurement - Site type (WELL - UCL) and (BOME, WASS, CHPM - UCC) See Appendix K for explanation of field number L.T. - 1655 them (value) N.A. - NOt Analyzed F - Indicates filtered sample analysis

ADIO H-3 COMPLETE LISTING OF RINSATES

(RUM DETABLESE)

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<u>z</u>																																					
i votatilles																																					

R - Rejected-cut of control units of measurement - Site type (WELL + UCL) and (BOME, WASS, CMPH - UCC) see Appendix R for explanation of field number

L.T. + less then (value) N.A. + NOI Analyzed f - indicates fillered sample analysis

Page No. 25 10/05/50

Table H-3 COMPLETE LISTING OF RINSATES

(RMA DETECTASE)

i volatites	1 Seei -voiattiles	S	5	1 08CF	i oleo/deno	- 08CH3	I IMPA/IMPA	larsenic	f i Mercury	
				. 		. - -				
	WCSWID13 (CONF. d)									
	COPPIR ND 8.4000	2								
	150DR LT 7.8000	2								
	150PR LT 4.8000	2								
	E IN ND 4.000	2								
	MEXCLR ND 5.1000	2								
	MLTH LT 21.0000	2								
	NAP LT 0.500	2								
	NB LT 0.5000	2								
	NOMEA NO 2.000	2								
	MDMA 17 4.400	2								
	NOPA ND 3.000	2								
	004T LT 27.0000	2								
	PCD016 ND 21.0000	2								
	PCB221 ND 21.0000	2								
	PCB232 ND 21.0000	2								
	PCB242 ND 30.0000	2								
	PCB248 ND 30.0000	2								•
	PCB254 ND 34.0000	2								
	 8	2								
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	ב	8								
	PPDDD ND 4.0000	8								
	9	8								
	-	2								
	₽	8								
	PPDDT LT 18.0000	8								
	PRTH LT 37.0000	8								
	PAR NO 2,8000	8								
	SUPOM LT 19,0000	8								
	TVELETY NO. 14. COMMO	8								

...... field number - wcswmozs site to - m-liswmass site type - wass sample Date - 89126 (jullan)

Ş 0.3920 TDCCL LT 6.6900 M.A. 0.1880 11 de 10 de 0.0500 M.A. 0.0950 0.0900 1.000 812 LT 5.000 ALDRH LT 1.700 CMG LT 5.690 CLDM LT 2.0000 CMGO LT 11.5000 DLDRH LT 1247CB LT 120CLB LT 120PH ND

17 \$00.6000 17 8.4000 17 24.0000

5 8 5

17 0.1000

¥

4.7600

R - Rejected-out of control Units of measurement - Site type (MELL - UQL) and (BOME, WASS, CHPH - UGC) see Appendix R for explanation of field number

L.T. - less then (value) $_{\rm N.A.}$ - Not Aralyzed $\it f$ - Indicates Tillered sample analysis

Page NO. 26 10/05/90

Table M-3 COMPLETE LISTING OF RINSATES

					(RMA Delabase)	Dase)						
vola (105	1 Semi-volatilles 1	1 833	<u>8</u> _	- 1 080	dama/daria t	1 0508	Adit/Adit (jarsenic i	f i mercury	f 1 100	_	
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	2410-11	4.200								2 4		22.0000
	246TCP LT	3.6000										
	2400P LT	2.9000										
	240CLP LT	B. 4000										
	24DMPN LT	9.800										
	_	4.4000										
		21.0000										
		176.0000										
		4.5000										
	_	0.7900										
		0.400										
		2.8000										
		0.5000										
		1.7000										
		3.900										
	5	3.6000										
	=	4.3000										
	: :	3.700										
	9	12,000										
	TI TIME	4.900										
	460V2C ND	17.0000										
	SEPTE 10	4.2000										
	ACMIL LT	7.3000										
	11 250	4.0000										
	אמאכ וג	9.5000										
	אמות וו	5.1000										
	5	0.5200										
	=	2.8000										
	11 11000	9.7000										
	5	12.0000										
		96.000										
	ABINC NO	4.0000										
	ACH.OR ND	5.1000										

 $L,T_{\rm c}$ = less then (walue) $_{\rm M,A,}$ - Not analyzed r - indicates fillered sample analysis

R - Rejected-out of control Units of measurement - site type (WELL - UQ.) and (Bonk, WASS, CMPH - UG.) See Appendix K for explanation of field number

Page 10. U. Salaria

Table M-3 COMPLETE LISTING OF RINSATES

(RMA Detabase)

-				1	1 . motals
1					
		i			
3.000					
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9.5000					
9.5000					
S. 9000					
. \$000					
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.9000					
4.8000					
1,600					
4 7000					
400					
8					
. 200 -					
10.000					
13.0000					
6 . 1000					
0.8700					
0.7200					
3.4000					
1.6000					
0009.					
34.0000					
1.5000					
37.0000					
10.000					
15.1900					
5.3000					
6.5000					
12.0000					
4.000					
1.7000					
3.500					
. 5000					
2.0000					
31					

t.T. = 1655 then (value) N.A. - NOL Amily2ed $f = 1nd(cates \ filltered \ supje anglysis$

R - Rejected-cut of control Units of measurement - Site type (WELL - UCL) and (BOME, WASS, CHPH - UCC) See Appendix K for explanation of field number

PEGE NO. 28 10/05/10

Table M-3 COMPLETE LISTING OF RINSATES

(RMA DETabase)

i volatiles	Semi-volatiles	2 2 2	 s-coo	60 80	8008	I IMPA/MPA	larsenic	f I Mercury	7 1 10 8 1 10 8 1 10
									-
	WCSWD23 (CONT. d)	(p .							
		4.7000							
		26.0000							
	_	130.000							
٠		3 7000							
	_	15.0000							
		7.6000							
		18.0000							
		8 8							
	ES FSOM NO	9.200							
	FAT	3.3000							
	PLRENE LT	3.7000							
	_	5.1000							
	17 080	3.4000							
	9	2.000							•
		2.000							
	SOME	4.8000		•					
	2	4.000							
	MEXCLE NO	5.1000							
	_	21.0000							
	: :	0.500							
	MOKEA NO	2.0000							
	MONPA LT	4.400							
	MOPA NO	3.0000							
	1	27.0000							
	122	2 2							
	PO8232 NO	21.0000							
	PC8242 NO	30.000							
	PC8248 NO	36.0000							
	MO354 NO	34,0000							
	PCB260 NO	₩.0000							
		19.000							
	5	• 1000							

 $L.T_{\star}$. Tess then (value) $_{\rm N.A.}$ - Not analyzed $_{\rm F}$ - indicates filtered sample analysis

R - Rejected-out of control Units of measurement - site type (WELL - UCL) and (BOME, WASS, CAPM - UCD) See Appendix K for explanation of rield number

Page No. 29 10/05/10

TABLE H-3 COMPLETE LISTING OF RINSATES

(RMA Detabase)

	1								500 .0000 8 .4000 24 .0000 35 .0000 250 .0000 500 .0000 74 .0000 22 .0000
•									5555555
F 1 10 1 1 metals			X.		₹.		¥.		3952 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
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F #6rcury 			ž		£		¥		¥
	}		2.3500		2.6300		7.4200		2.3500
2			11						5
Arsenic	<u> </u>		\$		2		2		হ
1 1MPA/14PA 1 1									
	<u> </u> 		N.A.		K.A.		K.A.		6. 6900 N.A.
8008			N.A.		R.A.		N.A.		0.3930 TDGCL LT
									0.3920
Chance Control		(Jul 14n)	₹, ≜ .	(Jul Ian)	N.A.	(Jul 1en)	N.A.	(Julian)	17 de 10
		Date - 89150 (Julian)		Date - 89143 (JUIIan)		Date - 49143 (juilan)		Date - 89145 (Julian)	
b 8 		Sample Date	R.A.	Sample Date	M.A.	Sample Date	R.A.	Sample Date	₹ *
		BORE				BORE		- WASS	
8		Site type - BORE	K.A.	Site type - BORE	N.A.	Site type - BORE	M.A.	SITE TYPE - WASS	5,0000 N.A. 5,6900 1,5000 7,4600 1,3400 0,5500 2,3800
		8		ğ		8		8	5,0000 5,6900 11,5000 7,4600 1,3400 0,5500 2,3600
		AT BORE		M BORE		#1 BOR			555555
8 	8888888888	- 01 •1	K.A.	SITE ID - MIBOREOD6	N.A.	\$110 ID - MIBOREO06	K.A.	SILE ID - MIBOREDOB	B12 CPMS CPMSO CPMSO2 DITH DMOS GWAT
\$ =	(6) 9.5000 9.2000 4.0000 4.7000 14.0000 9.2000 19.0000 19.	223 S							
	PENNIE NO PRENCL LT PRENCL	- 4006	٠	99034 -	٠	- MO65	٠	MOOM -	ے
3	HENDER PRODUCTION OF THE PRODU	1d number	1.1	td number	1.1	id number	1:1	td rumber	5
1 volaci i es		fleid number - wcb45023 Site ID - MIBOREGOA	N.A.	fleid number - wcb60193	N.A.	field number - wcb65073	N.A.	Field number - wcmewo43	j
	•	•	-	•	-	•		•	

R + Rejected-out of control units of Resourement - site type (MELL + UCL) and (BORE, WASS, CHPN + UCC) see Appendix K for explanation of field number L.T. - loss then (walue) N.A. - Not Amilyzed f - indicates filtered sample amilysis

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FBQE NG. 1 10/05/90

Table H-4
COMPLETE LISTING
Of
SAMPLE AND DUDITIONS

volati 165	i Seni-volatiles i i	558		80	1 DBCP	ama/anja	60.045	1 IMPA/MPA	larsenic i i		F Mercury 	, nr	f 1 tCP 1 1 motals 4 f 9 l
fleid number - WC70001 Site 10 - 01077	UMBer - WC70001	SILe 10 - 01		Site type - Well	Sample Date - 69153 (juilan)	(jutian)						i	
#.A.	#.A.	R.A.	*	H.A.	R.A.	и. У.	¥.	R.A.	88	17 2.350	2.3500 HG 2.3500 F HG	55	0.1000 F N.A. 0.1000
DUPLICATE + WOT	DUPLICATE - W-770002 SITE ID - 01077		Site type - Well	ili sample Date - 89153	- 89153 (JUIIAN)								
₹ 2	н.А.	Ä,	z	H.A.	4. 4.	A.A.	K.A.	¥.	នន	(1 2.350 (1 2.350	2.3500 D HC 2.3500 D HG	55	0.1000 D N.A. 0.1000 D
Field number - WCS40001 Site 10 - 36054	URDer - WCS40001	SH 0 0 36		Site type - WELL	Sample Date - 89164 (jullan)	(Jul lan)				į			

5.5000 F	7.0000																							
49.0000 F HG																								
69.64	110.000																							
¥	য়																							
LT 0.3920 TDGCL LT 67.0000 N.A.																								
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0.3920	1200.0000																							
ā																								
11.0000 N.A.	14.0000	1.5000	0.6900	1.4000	0.3250	1.7000																		
AL DRIN	CLDAN	DL DRN	ENDRIN	15008	300	PEDOT																		
23.2000 A	00000.00	33,2000	70.0000	1.8300	0.5500	2.5600																		
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<u>.</u>																								
.1 0000	900	9000	9000	9000	9000	9000	9000	9000	0000	9000	9000	9000	9000	0000	9000	9000	9000	9000	9000	9000	9000	9000	88	9000
8	8	8	120CE LT 2500.0000	7 500	8	17 500	17 2400	17 S00	LT 1750	T 4000	ACRYLO LT 4200,0000	17 500	T 6000	7 4000	2870	200	11 500	35	17 7000	ODG. LT 600.0000	17 5500	4000	CL CSHE LT 500.0000	DBRCLM LT 500.000
5	_						_	_	_	_	_		_	-		_	_		_	_	_		_	_
1127CE LT 500.0000 L.T.	11DCE LT 500.0000	1 DOLE 1	200	100C	120CLP	300.0	3000	30.0	ia eve	CET	COMO	MOCLA	HOG.	2160	949	30.35	70.	70C.2	200	202	500	ET.	9401	MECLE

3852 ¥ 2 2 2 A

L.T. - Less Than Certified Reporting Limits M.A. - Analysis NOT Requested F - Indicates fillered sample analysis

PBQB NO. 10/05/90

COMPLETE FISTING 1801e H-4

F I fOP I I Metals A I F I Mercury F I **IA**rsenic 1 OSCNS Sample and Dupilcate I Dispidant DBCP 8 - 08C | Semi-volatiles , volatiles

FIELD_NO - WCS.40001 CONT. IRJUR

MEK 17 5000,0000 TCLEA 17 750,0000 TCLEE 17 500,0000 TMCLE 17 500,0000 XYLEN 17 1000,0000 DCLB LT 1000.0000 ETC645 LT 500.0000 MEC645 LT 500.0000

Site type - WEll Sample Date - 89164 (jullan) DUPLICATE - WCS40002 SHIP ID - 36054

11,0000 N.A. 14,0000 1,7000 0,7500 1,2200 0,3460 1,8000 20,3000 ALDRY 850,0000 CLDMY 36,4000 DLDRY 930,0000 ENDRY 1,3400 1500R 0,5500 PFDDE 2,3800 PFDDE 1,7000 812 2,8000 CP46 3,4000 CP460 8,4000 CP4602 4. 4000 DITH 1117CE LT 5000,0000 2367CP LT
1127CE LT 5000,0000 2457CP LT
1107CE LT 5000,0000 2467CP LT
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1 BRDCLM LT 5000.0000 ATZ C2HGCL LT60000.0000 CL6CP 13DMB LT 50:0,0000 4CL3C ACET 1140000.0000 4NP ACEMIO 1142000.0000 ALDEN CHECL LY40000.0000 CLDAN 25200.0000 CPIE 30CP 1124000.0000 2NP 2CLEVE LT17500.0000

CCLA LT 5000.0000 CPM502 GT

GGC12 LT 5000.0000 DBCP GGGR LT70000.0000 DCPO

CCL3F LT 5000.0000 CPISO

OGCI, 11 6000,0000 DOVP OGCI 1155000,0000 B1NP CLCSHS 6730,0000 BLBH CLCSHS 175000,0000 BUBH DBRCLM 17 5000,0000 DBMP

6730.0000 DLDIEN

\$20000.000 LT 74.0000 61.8000

LT 8.4000 42.4000 300000 000

50,4000 D HG 104,0000 D HG

হ হ

DIMP 17 0.3920 TDGCL 17 6.6900 N.A. DAMP 1200.0000

7770.0000 0000 0000

5. 8000 0 5. 0000 0 5. 0000 0 7. 0000 0 8. 00

L.T. - Less Then Certified Reporting Limits M.A. - Analysis Mos Requested F - Indicates filtered sample analysis

PBQC NO. 3 10/05/90

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Table H-4
Complete Listing
Of
Sample and Duplicate

F | Mercury | 1 | 8 Arsenic I MPA/MPA 1 OSCMS I DIMD/DMMD D80 900 - 863 i semi-volatiles volatiles

DUPLICATE - WCS40002 CONLINUED

DCLB LT10000_0000 ENGRN LT 18_0000
ETCHS LT 5000_0000 ISODR LT 7_0000
MCCNS LT 5000_0000 MLTNH LT 21_0000
MEK LT5000_0000 MLTNH LT 21_0000
MISK LT7000_0000 PCP LT 9_1000
TCLE LT 5000_0000 PCDE LT 14_0000
TRCLE LT 5000_0000 PPCDE LT 14_0000
TRCLE LT 5000_0000 PPCDE LT 18_0000
XYLEN LT10000_0000 PRTNH LT 37_0000

...... Field number - WG5/Q001 Site 10 - 3667 Site type - Wflt Sample Date - 8917 (Julian)

র 2200.0000 DIMP LT 0.3920 TDCCL LT 67.0000 N.A. DMMP 1600.0000 0.7750 DBCP 1.9000 0.0950 1.7000 1.9000 5.8000 0.6830 2.2000 330.0000 ALDRN 5.6900 CL6CP 65.4000 CLDAN LT 11.0000 OLDRN 1.3400 ENDRN 330.0000 1500R 2.3800 PPDDE 2.9900T 4000 DITH LT 4000 CPIESO2 \$ 2000 2400.PLT 17 120.0000 1111G LT 1
1121G LT 1
110G LT 1
110G LT 1
120G LT 1
120G LT 1
120G LT 1 BROCIN LT CHOC LT 1 CHGC LT 30CL 11 130CP LT JONG LT ACENE LT ACET LT ACEMIO LT 0003 000 C כמאל **9**490

230000 .000
LT 8 .0000
LT 24.0000
54.4000
45.0000
42.0000
45.0000
45.0000 .0000
LT 74.0000
53.5000

3852<u>2</u>2588

1.8300

¥

17.9000

L.T. - Less Than Certified Reporting Limits N.A. - Analysis Not Requested F - Indicates filtered Sample analysis

PBQB NO. 10/05/90

Table H-4
Complete LISTING
Of
Sample and Outplicate

r : 10° - 1 metals - 1 F 1 Mercury Arsenic I IMPA/MPA 1 DIRD/DRID | Seal -votatites I volatiles

FIELD_NO - WCS70001 CONCINUED

OUPLICATE - WC670002 Site 10 - 36067 Site 1909 - WELL SANDIE DAIG - 89117 (JULIAN)

TDCCL LT 67.0000 N.A. 2200.0000 N.A. 0.6960 DBCP 0.9300 13.0000 1.9000 2.0000 5.6000 0.7390 2.7000 5.490 CLGP 89.400 CLDM 11.100 DLDW 1.340 ENDR 370.000 ISCR 2.340 PPCDE PPCDT 240.0000 ALDIN 8.2000 87.3000 100.000 23610 ACET LT 800,0000 4NP ACPLO LT 840,0000 ALDRN C2HOCL LT 1200,0000 CL6CP C215CL LT 800,0000 CLDAN BRDCLM LT 100,0000 ATZ 2CLEVE LT 350.0000 CCL3F LT 100.00 CCL4 LT 100.00 OPCCL2 8060.00 11176 LT 1100 LT 1100 LT 1200 LT 1200 LT 1200 LT 1200 LT 1300 LT 1300 LT

220000,000 40,4000 40,1000 115,0000 12000,0000 440000,000 17,74,0000 95,6000

3858 ± 2 2 2 8 8

1.6100 0

22.5000 D NG

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Pege No. 10/05/90

Sample and Duplicate Table H-4 Complete HSTING

F 1 10° 1 1 Metals 0 1 f 1 Mercury (Arsenic \$ 05CMS dimologia i -80 1 Soul -Volatilles VOI & 1 | 105

DUPLICATE . WC670002 continued

CLC645 LT 100.0000 DLDR 11 1400.0000 DBRCLM LT 11 800 ETOSHS LT MEC646 **OFCL3**

L.T. . Less Than Certified Reporting Limits N.A. - Armiysis NOt Requested F - Indicates fiftiered sample armiysis

3.2600

8

0.6520

¥

28.8000

0.1140 CLC2A LT 35.5000 IMPA LT 2.1100 AS

0.0435 DIMP LT

8

LT 2.0400 N.A.

812

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Pege MO. 6 10/05/90

Table N-4 Complete LISTING Of Sample and Dublicate

	volatities	; semi-volatilles f	5080		5	\$600	60 C		ommo/omio i		808		1 mp.//mp.	Iarsenic I I	f i Mercury	f t t0 1 wetals 8 t	
CPMS LT 4.4000 CPMS LT 4.4000 CPMS LT 1.4500 DITH LT 1.4500 DMAT LT 1.4500	ELD_NO - W	Caesors continued	1		<u> </u>				_]						
CHRIST IT 9,0100 DITH IT 1.24500 DMMI IT 1.24500 DMMI IT 1.24500 DMMI IT 1.24500 DMMI IT 1.24500 DMMI IT 1.24500 DMMI IT 1.24500 DMMI IT 1.24500 DMMI IT 0.1330 TDCCL LT 4,2000 MPA 1T 2.1100 AS 28.7000 D HG 0.7220 B CD CD CD CD CD CD CD CD CD CD CD CD CD			5	ב	4.4000				Cheng	LT 0.13	30 TDCCL L			•		8 S	20.3000 55.8000
DITH LT 1.4500 DAGS LT 3.1200 GMAT LT 1.7400 GMAT LT 1.7400 GMAT LT 1.7400 DAGS LT 2.0400 H.A. DBCP LT 0.1540 CACIA LT 35.5000 lafeA LT 2.1100 AS 28.7000 D HC 0.7270 D CR CPMS LT 4.4000 CPMS LT 4.4000 CMS LT 3.1300 DAGS LT 3.1300 GMAT LT 1.7400			Š	27 20	9.0100											2	20 6000
LICATE - WCM85012 Site ID - 36186 Site IVPO - BCRE Sample Date - 89123 (julian) N.A. 812 LT 2.0400 M.A. DBCP LT 0.0050 Diap LT 0.1340 CLC2A LT 35.5000 iaPA LT 2.1100 AS 28.7000 D HC 0.7270 D CD CR CPHS LT 4.4000 CPHS LT 4.4000 CPHS LT 4.4000 CPHS LT 2.0000 DIAM LT 1.4000 DAM LT 1.4000 DAM LT 1.4000 DAM LT 1.7400			DE THE	555	1,4500 3,1200 1,7400											Ā	85.9000
M.A. BIZ LT 2.0400 M.A. DBCP LT 0.0550 DIMP LT 0.1340 CLC2A LT 35,5000 IMPA LT 2.1000 D HG 0.7270 0 CD CR CPHS LT 4.0000 DMMP LT 0.1330 TDCCL LT 4.2000 IMPA LT 2.0000 CD HG 0.7270 0 CD CPHS LT 4.4000 DMMP LT 1.4500 DMMP LT 1.4500 DMMP LT 1.4500 DMMP LT 1.7400	P.IGIE	WC365012 SITE ID - 361	2	5 10	1,400 - 808		89123	(Jul lan)									
N.A. CHAST IT 1.7400 DAWP LT 0.1330 TDGCL LT 4.2000 MPA LT 2.0000 CU CU CPMCD LT 9.6100 PPA DDGCL LT 1.4500 DMDS LT 1.1200 DMS LT 1.7400		,	;	:	3		Š	17 0.0	9x 10 050		ומט מכטע וו	1 35.5000			.7000 D HC	0.7230 0 GB	2.4700
9.0100 1.4500 3.1200 1.7400	l. 1.	Z.A.	8	: :	4.4000	ť		;	CHAMP		330 TDCCL L	.1 4.2000		•		5 8	14.000
1.4500 3.1200 1.7400			3	17 00	9.0100											2	64.3000
			1	5	1.4500											۵	103 0000
			80	<u>۔</u>	3.1200												
			00A)	ב	1.7400												

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	4 7 0000	0.1950 DIMP 6900.0000 N.A.	190.000																
Ē	,		-																
Date - 69156 (Julian)		0 1950 DII	2																
Date .		5																	
site type - Will sample		8.0000 DBCP	0.0626	0.0950	0.1050	0.0693	0.2270	0.0540	0.0490										
906		_		ב	_	-	~	5	5										
		S.0000 ALDRA	5.6900 CLECP	18.2000 CLDAN	26.9000 DLDRN	2200.0000 ENDIN	0.5500 15001	340.0000 PPDDE	200										
36189		ב	5	_		*	=	••											
Site 10 .		7000 812	2.8000 CPMS	3.4000 CPHS0	8.4000 CPISO2	4. 4000 DITH	11,1000 24DMF LT 176,0000 DMDS	2.8000 0KAT	3.6000	9.2000	9.5000	0008	0000	13.000	9006.1	0000	37.0000	0000	15.0000
19006		_					17 17	:	=	ב	-	 5	٠ 5	-	5	=	=	Í	- 5
¥ - 1		1.0000 236TCP LT	3.7400 245TCF LT	1.0000 246TCP LT	1.0000 24DCLP LT	8.7600 24DMPN LT	2004	20.0	1.0000 246	ž	1.0000 40130	•	*	B. 4000 ALDRY	1.0000 ATZ	980	8.0000 CLDAN	1.0000 CPIS	1.0000 CM50 LT
NO DIE		1.9000	3.7400	1.000	1.000	8.7600	21.1000	1.0000	1.000	4.8000 2NF	1.0000	3.5000 4	8.0000 ANP	£.4006	1.0000	12.000	.000	1.000	- 98
100000 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		TITOE LT	11270	ווסמב ונ	ווסמנ ון	120CE	TOOLE	120CLP LT	130CLB LT	13000							CHECL LT	C646 LT	ממש ונ

L.T. - Less Than cortified Asporting Limits N.A. - Analysis Not mequested | F - Indicates filtered sample analysis

FBGB NO. 10/05/90

Teble H-4
COMPLETE LISTING
Of
SAMPLE AND DUDITICATE

f i iop i i metals A i F | Mercury JArsenic IMPA/MPA 1 OSCHS DIRO/DRIG I \$ 00 <u>-</u> - 680 1 Semi-volatiles volatiles

FIELD_NO - WCB9CDOT CONLINUED

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CUPLICATE - WCB9CDO2 SITE ID - 36189 SITE TYDE - WELL SANDIE DATE - 89156 (JULIAN)

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L.T. - Less Than Certified Reporting Limits M.A. - Analysis not Requested F - Indicates filtered sample analysis

10/05/90

Table H-4
COMPLETE LISTING
Of
Sample and Duplicate

r - i Gr - i metals 0 r i mercury |Arsentc I OSCMS I DIRO/DRIND 08C 200 - 860 i semi-volatiles volatiles

DUPLICATE - WCB9CD02 CONLINUED

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...... Field number - wcyocott site to - setso site type - well sample Date - 89166 (julian)

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ב ב	112TCE LT 200.0000 24STCP LT	5	2.8000 CPMS	5	5.6900 CLDAN	21.0000		1300.0000		Y AR	17 1000 0000	
11	110CE LT 200.0000 246TCP LT	50	3.6000 CPMS0	_	30.1000 DLDRN LT					Z.		
11 11	HDCLE LT 200.0000 240CLP LT	16 11	8.4000 CPISO2		44, 2000 ENDRN	1.5000						
111	12DCE LT 1000.0000 24DMPN LT	5	4.4000 DITH		9.6500 ISODR	3.2000						•
ונו	200.000 24DH	5	120CLE LT 200.0000 24DMP LT 176.0000 DMDS	•	710.0000 PPDDE	1.6000						
11 41	120CLP LT 200.0000 2CLP	5	2.8000 CDAT		6.0000 PPDDT	3.7000						
11 81	130CLB LT 200.0000 2MP	ב	3.6000									
5	130CF LT 940.0000 2NF	=	8. 2000								•	
5	13048 LT 200.0000 4CL3C	L1 0	8.5000									
נו ע	20LEVE LT 700.0000 AMP	5	2.8000									
-	5930,0000 AVP	5	\$6.0000									

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L.T. . Less Than Certified Reporting Limits M.A. . Analysis not Requested f - indicates filtered sample analysis

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- CECUES Table H-4
Complete Listing
of
Sample and Daplicate 8 - 80 Soul - Volatilles

FIELD_NO - WC900011 CONLINUED

volatiies

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r i mercury i i a i

15,0000 39,0000 300,0000 44,1000 8,5000 300,0000 3,5000 15,0000 16,0000 17,6000 27,6000 27,6000 27,6000 ACRYLO LT 1640,0000 ALDRY 1900CL LT 2400,0000 CLUCP 1C2HCL LT 1500,0000 CLUCP 1C2HCL LT 100,0000 CPUS 1CHK 1T 200,0000 CPUS 1 CO.1 LT 2 CO.4 LT 2 CO.00. LT 20 CO.00. LT 20 CLCSHB LT MECANS **OFC.3**

Sample Date - 89166 (Jullan) Site type - WELL DUPLICATE - WC900012 SILE 10 - 36190

760,0000 DIMP 1,9000 2,1000 1,8000 4,0000 1,1000 2,6000 35.1000 ALDBN 7.0500 CLDAN 42.3000 DLDBN 59.4000 ENDBN 16.4000 ISODE 940.0000 PPDDE 9.2500 PPDDT 1,7000 812 2,8000 CMS 3,4000 CMS 4,4000 DMS 4,4000 DMS 174,8000 GMY 3,4000 F 8,2000 20.0000 235/CP LT 20.0000 245/CP LT 20.0000 245/CP LT 100.0000 245/KP LT 20.0000 245/KP LT 1137G LT 1137G LT 110G LT 1100.E LT 1200.E LT 1200.E LT 13008 LT 1300P LT 1304B LT

L.T. - LOSS Than Cartified Reporting Limits N.A. - Analysis Not Requested

17 6.4000 70.5000 30.5000 19000.0000 130000.000 1300000.00 117 74.0000 152.0000 5658×2128

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67.0000 FCJA HINA HPA

1100.0000 TDCL LT 1300.0000

P808 NO. 10/05/90

Table H-4
COMDISTING
Of
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volatiles i semi-volatiles i oscs i ocres i pece i pimp/pamo

f | Mercury

1 Arsenic

I OSCUIS

DUPLICATE - WC900012 CONTINUED

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---- field number - WC920001 Site 10 - 36192 Site 1400 - WELL Sample Date - 69164 (julian)

2845 * # 0.1000 ٥ ¥ 2 3500 5 100.0000 AS 100.0000 100.0000 555 6.6900 FCJA 0.3920 TDCCL LT 0.1880 בב 0.1950 DIMP 0.0500 DBCP 0.0480 0.0930 0.0930 0.0500 5.6900 CLDM 11.5000 CLDM 7.4600 DCDM 1.3400 ENDM 0.5500 1500R 0745 LT CPMS0 LT CPMS0 LT CPMS0 LT CPMS0 LT

230000,000 LT 24,0000 LT 24,0000 S060,0000 21900,0000

L.T. - Less Than Cortified Reporting Limits M.A. - Amiysis Not Requested F - Indicates filliered sample amiysis

6.6900 FC2A IMPA IMPA 0.3920 TOCCL LT 0.1880 8008 Sample and Dupilicate Table M-4 COMPLETE HISTING Of 55 i plano/omio QM10 0:1950 D1MP Site type - WELL Sample Date - 89164 (Julian) 0.0500 DBCP 0.0400 0.0500 0.0500 0.0510 0.0540 4080 1 0.0540 55 5.0000 ALDSW 5.6900 CL6CP 11.5000 CLDSW 7.6600 CLDSW 1.3400 ENDSW 2.3600 PYDOE 2.3600 PYDOE 2.3600 PFDDE PPDDT <u>8</u> CPMS LT
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CPMS 5 - 08CS DUPLICATE - WC920002 SITE 10 - 36192 | Seal-volatiles FIELD_NO - WC920001 CONTINUED

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	2.1100 AS LT 2.5000 2.0000	2.0000 b (T 3.5000 0 HG 2.0000
	55	55
	35, 5000 148A	35,5000 14PA 4,2000 HPA
	0.1130 DQC LT	0.1140 CLCJA LT 35,5000 1MPA LT 0.1330 TDCCL LT 4.2000 MPA LT
=	55	55
Date - 89137 (juitan)	CT 0.0050 D1MP	0.0050 D14P
:	5	Cjultan)
Semole	t	0.0015 00CP 0.0018 00CP 0.0018 0.0030 0.0031 0.0058
Site type - BORE		
. 904	55555555	2 A Z Z Z Z
\$110	3.0400 ALDM LT 4.4000 CL6CP LT 9.0100 CLDM LT 1.4500 DLDM LT 1.7400 BCDM LT 1.7400 BCDM LT PPODE LT PPODE LT	11 1,0400 ALOPH 1 1 1,44000 CLOPH 1 1 1,4500 DLOPH 1 1 1,4500 DLOPH 1 1 1,7400 ISOPH 1 1 1,7400 ISOPH 1 1 1,7400 ISOPH 1 1 1,7400 ISOPH 1 1 1,7400 ISOPH 1 1 1,7400 ISOPH 1 1 1 1 1 1 1 1 1
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Site 10 - 36192	812 LT CPMS LT CPMS LT DITM LT DOUGS LT GRAT LT	MIT COME COME COME COME COME COME COME COME
Field number - wc925191	5	OUPLICATE - WESTS192 SITE 10 - 36192 T.
	13	מתומת

f - Indicates fillered sample analysis L.T. . Less Than Certified Reporting Limits M.A. . Armiysis Not Requested

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75000.000 LT 74.0000 434.0000

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Page No. 12 10/05/40

Sample and Dupilicate Table H-4 Complete 115TING

- - 10 - - metals r i mercury IArsenic I IMPA/MPA - 05 CMS demovorio i - 08CP | Semi-volatiles I VOIACIIOS

DUPLICATE - WC925192 CONTINUED

PPDDE 1.7 0.0024

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	0.1140 CICZA LT 35.5000 N.A. 0.1330 TDCL LT 4.2000	0.1140 CICZA LT 35.5000 N.A. 0.1330 TDCC, LT 4.2000	
	55	55	
	6 1500 1000 1000 1000	8 a.c.	
	9.5. 5.1.	6.0	
Ş	55	5 5	an)
Date - 89166 (Julian)	0	<u>a</u> a	Dete - 49117 (Tullan)
- 89166		Cool 1en	- 49117
9 Set			e Date
Statole	₹ 2	Sample Date - 89164	
2		8	WASS
Ite type - BORE	1		1000
2	4.400 4.400 4.4100 9.0100 1.4500 3.1200	Sile type - BORE LT 2.0400 M.A. LT 4.4000 LT 4.8100 LT 9.0100 LT 9.1200 LT 1.7400 LT 1.7400	5
7		2	ENOM
. 361	11 2000 11 9000 11 9000 11 9000 11 9000		1 - 361
field number - WC945041 Site ID - 36194	555558	BYZ CP85 CP85 CP85 CP85 CP85 CP85 CP85 CP85	Fleid fluider - wcitwoo! Site to - 36785NOH! Site type - wass
15041		SI te 10 - 36194	100%
Š	1	12 S10	- 10
	ني ا	CLPLICATE • WC948042	200
- 10 E		# ₹	- Fleid
	4	BALIS.	
i	ند	- ,	i

0.050.0 5 ¥ 3.400 2.1100 AS 2.0000 בב 0.2260 N.A. 0.1330 5 0.0050 DIMP = **6080** 2.0400 N.A. 9.0100 1.4500 3.1200 1.7400 4.4000 812 (1 CMS 11 CMS 11 DIM 11 DIM 11 A.A.

0.7400 11.5000 15.3000 25.6000 49.8000

8 5 2 E &

5

0.7400

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0.0500 b CD

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2.5000 D HC

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LT 2.1100 AS

1 MPA

0.2270 M.A.

0.0315 DIMP DUPLICATE - WC11W002 SITE 10 - MATREMONT SITE TYPE - WASS SARDIE DATE - 89117 (JULIAN) **0** 7 WHEN H.A. = **8**12

L.T. - Loss Than Cortified Reporting Limits M.A. - Analysis not Requested F - Indicates filtered sample analysis

2	
7808 NO.	10/08/40

r 1 109 1 1 metals 0 1	CR 13.3000 CJ 54.1000 PB 157.0000 28 53.6000	12.0000 GD 2.1600 GP 6000 GP 6	34.0000 0 CD 1.9500 CR 45.6000 CU 173.0000
F Mercury		28.1000 FE	16.7000 D HG 3
IArsenic	2.0000	2.1100 AS 2.0000	2.1100 AS 2.0000
ş	5	55	5 5
I IMPA/MPA	ś	35. 5000 1aPA 4. 2000 mPA	35,5000 HPA 4,2000 HPA
	0.1330	0.2180 CLCJA LT	0.2810 CLC2A LT 0.1330 TDCCL LT
dmg/dr (0	Date 11	DBCP LT 0.0050 DIAP LT DBMP LT DBMP LT DBMP LT DBMP LT DBMP LT DBMP LT DBMP LT DBMP LT DBMP LT DBMP LT CJUITEN)	0.0050 DIAP DAMO LT
58		<u>.</u>	13 ADBC6 14
8	1 4.400 7 9.0100 1 1.4500 1 3.1200 1 1.7400) ÷	T 2.0400 N.A. T 4.4000 T 9.0100
800	CPMS LT CPMSO2 LT DITH LT DMOS LT	010 - 36T 0765 LT 0765 LT 0767 LT 0764 SH	פונג וו כאופ וו כאופסה וו
seal-volatiles		, · · · · · · · · · · · · · · · · · · ·	
5	DUPLICATE • WCI 1W002 CONTINUED		6,4306 N.A. 9,3900 1,7000
volati i es	DIRLICATE	111170E LT 11220CE 1220	11174 LT 11274 LT 11806 LT

L.T. . Less Than Certified Reporting Limits M.A. - Analysis Not Requested F - Indicates fillered sample analysis

Table H-4
Complete 115TING
of
Sample and Duplicate

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larsenic	_	-	
I IMPA/MPA	-	-	
1 OSCHS		_	
1 piety/omito	_		
1 080	-	_	
1 00%	_	-	
5290		_	
SOUL-VOLATITOS OSCS	~	_	
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DUPLICATE - WC14M003 CONTINUED

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Field number - WCSVWDO1 Site ID - M-11SVWASS Site 1900 - WASS	den neb	-	CS VMD0	<u>.</u>	0	-1 -1 -1 -1	WINSS	SI to	843	WASS	Sample Date - 89129 (juillen)		=		
نے	-	124TOB LT	1	0.0	0.0400 812	=	2.040	O ALDR	5		0.0019 N.A.	9	5	0.1140	
	-	120CLB LT	111	0.13	986	5	4.400	2970 0	-		ote	Date:	-	0.1330	
	_	ON HOCK	ş	0.140	0.1400 CPIE02 LT	=	\$.01	9.0100 CLDAN LT	7		230				
	_	250	-	0.147	3.1470 OITH	5	1.450	D ENDR	ב		950				
	_	130CLB LT	111	0.1300	SOHO 6	5	3.126	3.1200 150DR	-	9	6.0011				
	_	1400.1	11	0.0	D COCAT	5	1.74	0044 0		9	1024				
	••	24STC	11	0.100	•			1004	11	9.	0.0030				
	***	24670	17	0.1700	_										
	••	240Q.	1	0.160											
		2	וו	0.630											
		Š	5	1.200	_										
		20NT LT	5	0.140											
	,,	260M	5	9.085	•										
	•	ğ	5	0090	•										

1.7. - Less Then Cartified Reporting Limits M.A. - Amilysis wot Requested F - Indicates filtered sample analysis

4000,0000 ¥ 34000,0000

\$

CLC2A LT 35.5000 N.A. TOCL LT 4.2000

2500.0000 740.0000

2 4

PBGB ND. 15 10/05/90

200 E

| Seal-volatiles

1 votatiles

i bimo/omo

F I METCUTY

Table H-4
COMPISION 11STING
Of
Sample and Dupilicate

FIELD_NO - WCSWIDD1 CONTINUED

0.0360	0.0340	0.0620	0.1400	6.3000	0.4500	0.5500	0.0330	0.8100	0.0950	0.0330	0.2400	0.4100	1.4000	0.2700	0.3300	0.6200	0.3000	0.3300	0.0360	0.0330	0.0330	0.3000	0.0500	0.2000	0.0330	0.6200	0.1700	0.2500	0.2100	0.2700	0.1700	0.6200	0.8500	6.1000	0.2500
20MP LT			_	_	_	_	_	_		_		-		-	_	_		_	_		_					_	-	_	_	_	_	_	_	_	_

L.T. - Less Than Certified Reporting Limits N.A. - Analysis NOT Requested F - Indicates filtered sample analysis

Page NO. 16 10/05/90

Table M-4
COMPLETE LISTING
Of
SAMPLE AND DUPLICATE

dimording t | Semi-volatiles |

i volatiles

F I Mercury

FIEED_NO - WCSW001 CONTINUED

•			•	•	•		•	•		•	•	•	•	•	•	•	•	•	•	•	•		9	•	•	•	0	•	•	•	•	•	•	•	9
	0.1900			-																															
DEFENT NO	BZALC LT	5	5	0.5 C1.5	9	ů	ON AND	CL68Z NO	מפט רו	מפפה וו	Q667 L1	משאיי	SHO	CPMSO L1	CPMS02 L1	DEATH NO	DBCP 1.1	DHYC W	DBZFUR LI	0000	- AAQQ	130	日本日	DEDME	DLDRN M	- A	DABP	DAOP M	C) NECONS	ENDRA	ENDRINA NO	ENCIDENT NO	ESTSO4 NO	FANT NE	FLRENE LT

L.T. - Less Than Cartified Reporting Limits M.A. - Armiysis wot Requested F - Indicates filtered sample analysis

i volatiles

Pege No. 17 10/05/90

Table H-4
COMPLETE FISTING
Of
Sample and Dupilcate

F + Mercury	-	-	10
jarsenic	_	_	
IMPA/MPA	_	_	
1 050115	_	_	
dano/da jo j	_	_	
I DBCP	_	_	
0CPs			
803	_	_	
Semi-volatilles	-	-	
-	-	-	<u>-</u>

FIELD_NO - WCSWADOT CONTINUED

0.3300	0.2300	0.1300	0.3300	0.2900	0.3000	0.0330	0.2700	0.3300	0.7000	0.0370	0.0450	0.1400	0.2000	0.1900	0.3000	1.4000	1.4000	1.4000	1.4000	2.0000	2.3000	2.6000	1.3000	0.0330	0.1100	0.3000	0.6000	0.3100	0.5000	0.3100	0.900	0.0330	0.6000	2.6000	
_	17 OBO 1	_	_	_				_				_				_	_	_	_	_	-	_	_	_		_		_		_	_	_		-	

DUPLICATE . WCSWOOD SITE ID . N-115WMASS SITE TYDE . WASS SAMDLE DATE - 89139 (JULIAN)

LT 2.0400 ALDBN LT 0.0019 N.A. 124TCB LT 0.0400 BTZ

0.1140 CLC2A LT 35.5000 N.A. DIMP LT

Ş

38000.0000 D HC

4600.0000 D CD

1800,0000

L.T. . Loss Than Cortified Reporting Limits N.A. . Analysis Not Requested F - Indicates filtered sample analysis

PB09 NO. 16 10/05/90

Table H-4
COMDiete LISTING
Of
Sample and Dublicate

F i Mercury	=	-	10
IArsenic	-	_	
YdW/YdWI 1	-	_	
1 05 CMs	_	_	
dimo/dinio i	_	_	
I becr	_	_	
0CPs			
5080		_	
20118	-	-	

8 2 8 8

DUPLICATE - WCSVM002 CONLINUED

I volatiles

מסכום וג	9.380 03.0		4. 4000 CL6CP	=	8100.0	TT dama	_	0.1330 TOCCL LT	7, 7000
ZOPH NO	0.1400 CPM502		9.0100 CLDAN	=	0.0230				
SOCIE LT	0.1300 DITH		1.4500 ENDRN	5	0.0050				
HOGE LY	0.0980 DMDS	5	3.1200 150DR	5	1100.0				
2457CP LT	0.1000 DXAT	5	1.7400 PPDDE	11	0.0024				
246TCP LT	0.1700		PPDDT	5	0.0020				
MOCH IT	0.1800								
24DMPN LT	0.6400								
240VP LT	1.2000								
24DNT LT	0.1400								
26DNT LT	0.0450								
מי וז	0.0600								
20MP 17	0.0360								
2MAP LT	0.0490								
74 CH	0.0340								
MANIL LT	0.0620								
TI ONE	0.1400								
330CBD NO	6.3000								
MANIL LT	0.4500								
MON2C ND	0.5500								
REPPE NO	0.0330								
KOMIL LT	0.8100								
#CL3C LT	0.0950								
ACLPPE LT :	. 0.0330								
11	0.2400								
PLANIL LT	0.4100								
	1,4000								
ABRC NO	0.1700								
ACH OR NO	0.3300								
AENSLF ND	0.6200								
ALDRIN LT	0.3000								
ALDSW NO	0.3300								
MAPNE LT	0.0360								
WAPA LT	0.0330								
AKTRC NO	0.0330								
ATZ LT	9.3000								
* * ***********************************									

Table H-4
Complete Listing
of
Sample and Ouplicate

f 1 100 f f metafs a 1

F I Mercury I i

JArsenic

I IMPA/MPA

DUPLICATE - WCSW002 CONTINUED

| Seal-volatifes

Volatiles

0.2000	0.0330	0.6200	0.1700	0.2500	0,2100	0.2700	0.1700	0.6700	0.8500	6.1000	0.2500	0.0660	0.1900	0.1460	0.2960	0.2960	0.4430	0.4430	0.1200	0.0330	0.6000	6.2000	0.1500	2,0000	0.9000	0.3000	0.3000	0.2100	9.3000	0.2700	0.0350	1.0000	3.0000	0.2400	1.0000	0.4000
E LT							ş	3	9	ð	9	6	1						ş	ş	5	=	5	7	5	5	2 11	ğ	5	ş	R LT	5	ב	5	5	1
BZCIPE	BOCKE	BZEHP	BAANT	R P.R	BBFAN		479	BENSL	BENZ1	DEN SO	<u> </u>	BKFAN	BZALC	C13	23	5	S	ş	₩	C 682	a.6 0	aso	Q.6ET	MAG	9	CARSO	0300	DBAHA	080		26272	8	8	8	ě i	10

- Loss Than Cortified Reporting Limits N.A. - Analysis Not Requested F - Indicates fillered sample analysis

Pege No. 19 10/05/90

PM09 NO. 10/05/90

Table H-4
COMPLETE LISTING
Of
Sample and Dupilcate

f i iCP i i metals a i

r i wercurv i i a i

Jarsenic 1

I MPA/MPA

OSCHS

demolonio i

D80

800

| semi-volatiles | 05Cs

i volatilles

DUPLICATE - WCSW002 continued

0.3000	0.3100	0.1700	9.0610	0.1900	0.5000	0.4500	0.5300	0.5300	0.6200	0.0640	0.0330	0.3300	0.2300	0.1300	0.3300	0.2900	0.3000	0.0330	0.2700	0.3300	0.7000	0.0370	0.0450	0.1400	0.2000	0.1900	0.3000	1.4000	1.4000	1.4000	1.4000	1.0000	7.3000	2.6000	1.3000
_	_	_	_	_	_	_	_	_	_	_	_			_	-	_	_	_	_	_	_			_		_		-	_	_	_	_		PCB260 ND	_

L.T. . Less Than Certified Reporting Limits N.A. . Analysis NOT Requested F - Indicates filtered sample analysis

PHANTE ND 0.0330

PROF NO. 21 10/05/10

1.

Table N-4
Complete 11STING
Of
Sample and Cupilicate

:

-

r 1 10° r 1 metals a 1 f I wercurv jarsenic 1 05085 dwg/dwid i 800 | Somi-Volatilles y volatilles

OURLICATE . WCSW002 CONTINUED

PPDD NO 0.3000
PPDDE LT 0.6000
PPDDE LT 0.6000
PPDDT LT 0.5000
PPDDT ND 0.3100
PPDDT ND 0.3100
PPDT ND 0.3100
PPTR ND 0.03300
SUPCHA ND 0.03300
TYPPEN ND 0.03300

....... Field number - WCSVSAO! Site ID - M-1_SOIL-A Site (VDe - CHPH SAND(# Date - 69129 (JUllan)

5.4900 19.3000 12.1000 11.6000 90.3000

88888

32.0000

¥

2

0.1140 CLC2A LT 0.1330 TDCCL LT

L.T. . Less Than Certified Reporting Limits N.A. - Analysis NOT Requested F - Indicates filtered sample analysis

÷ ..

After

Table H-4
COMDIETE FISTING
Of
Sample and Dublicate

-

demo/desto s

908

| Seal -volatiles

I volatilies

FIELD_NO - WCSVSA01 CONTINUED

0.8100	0.0950	0.0330	0.3400	0.4100	1.4000	0.2700	0.3300	0.6200	0.3000	0.3300	0.0360	0.0330	0.0330	0.3000	0.0590	0.2000	0.0330	0.6200	0.1700	0.2500	0.2100	0.1700	0.1700	0.6200	0.8500	6.1000	0.2500	0.0660	0.1900	0.1200	0.1300	0.6000	6.3000	0.1500	2.0000
ACMIL LT				_	-	_	_		_	_			_	_	_	_		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	מנפנד נו	_

F - Indicates filtered sample analysis L.T. . LOSS THEN COTTIFIED REPORTING LIMITS M.A. . ANALYSIS NOT REQUESTED

CPMS 17 0.9000

Table H-4
Complete LISTING
Of
Sample and Duplicate

1 OSONS

dimo/diato

+ 08CP

200

Soul -volatiles

1 VOIALIIES

F I MOTCUTY

FIELD_NO - WCSVSA01 CONLINIED

0.3000	0.3000	0.2100	0.3000	0.2700	0.0350	1.0000	3.0000	0.2400	1.0000	0.4000	0.3000	0.3100	0.1700	0.0610	0.1900	0.5000	0.4500	0.5300	0.5300	0.6200	0.0680	0.0330	0.3300	0.2300	0,1300	0.3300	0.2900	0.3000	0.0330	0.2700	0.3300	0.7000	0.0370	0.0450	0.1400	0.2000
CPIESO LT																																				

L.T. . Loss Than Cartified Reporting Limits H.A. - Analysis Not Requested F - Indicates fillered sample analysis

P80e NO. 24 10/05/90

Table H-4 Complete LISTING

Sample and Duplicate

fimercury if

IArsenic

I OSCNS

908

1 08CS

| Seal -volatilies

I volatilles

PCB221 NO

FIELD_NO - WCSVSAO! CONTINUED

0.1100 PCG323 10
PCG324 10
PCG324 10
PCG324 10
PCG326 10
PCG7 10
PCG7 10
PCG 11
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PCG 11 SUPOW LT TXPHEN ND P # #

TUPLICATE - WCSVSA02 SITE ID . H-1_SOIL-A SITE (Vpe - CUPH SANDIE DATE - 89129 (JULIAN)

2.0400 N.A. 4.4000 9.0100 1.4500 3.1200 1.7400 0.0400 BTZ LT 0.1100 CP45 LT 0.1400 CP4502 LT 0.1300 DMDS LT 0.0980 GMT LT 0.1300 DMDS 0.0960 0XAT 0.0400 BTZ 0.1100 CPIS 0.1700 0.1800 0.6900 0.1000 134703 LT 1350CB LT 1350CB LT 136CB LT 245TO LT

6,0900 21,1000 13,7000 14,5000 63,4000

4 3 6 8 8

20.0000 0

180.0000 D HC

ş

0.1140 CLCZA LT 35.5000 N.A. 0.1330 TDCC LT 4.2000

= =

f - indicates filtered sample analysis L.T. - Less Then Certified Reporting Limits N.A. - Analysis not requested

PBQB NO. 25 10/05/90

Table H-4
COMPLETE HISTING
Of
SAMPLE AND DUDITIONS

r 1 10° - r metals a 1

F | Mercury f (

1 05OMS

O DIMO/ONIO

8

| Semi-Votatiles | OSCS

I volatilies

ont i rued	
SVSA02 C	
ATE - WC	
2	

0,1010	0.0600	0.0360	0.0490	0.0290	0.0620	0.1400	6.3000	0.4500	0.5500	0.0330	0.8100	0.0950	0.0330	0.2400	0.4100	1.4000	0.2700	0.3300	0.6200	0.3000	0.3300	0.0360	0.0330	0.0330	0.3000	0.0590	0.2000	0.0330	0.6200	0.1700	0.2500	0.2100	0.2700	0.1700	0.6200	0.8500
		_	_	_	_	_	_	_	_	_	-	_	_	_		-	_	_	_		_			_					-	_		-	_	_	BENGLF ND	ON 012N30

L.T. - Less Than Certified Reporting Limits N.A. - Analysis Not Requested for Indicates fillered sample analysis

Table H-4
Complete 11511NG
of
Sample and Duplicate

<u> </u>	-	+ + Metal3	-	0
-		-	-	10
1		_	_	
4007.4000		-	-	
1000	3	_	_	
		_	-	
age		-	_	
x	•	_	_	
5		-	-	
Soul selling to second		_	_	1
volatiles			_	

DUPLICATE - WCSVSA02 CONLINUED

6 . 1000	0.3500	0.0660	0.1900	0.1200	0.0330	0.6000	6. 2000	0.1500	2.0000	0.900	0.3000	0.3000	0.2100	0.3000	0.3700	0.0350	1.0000	3.0000	0.2400	1.0000	0.4000	0.3000	0.3100	0.1700	0.0610	0.1900	0.5000	0.4500	0.5300	0.5300	0.6200	0.0600	0.0330	0.3300	0.2300	0.1300
_	_	-	_	_	_	_	_	_	_	_	_	_	-	_	-	_	_		_	_	_	_	_	_	_	-	_	_	-	-	_	-	_	_	=	_
DENZON	2	BKFANT	BZALC	ò	789 D	0,00	09D	CLEET	O, DAM	8	C940	CPMS02	CRAHA	080		DEZFLE	908	BOV	8	ē	¥	PL DRW	DLORN	2	2000	dovo.	MONS	ENDON	ENDRA	ENDRAK	ES 1504	FANT	FLRENE	804.0R	HCBD	¥

L.T. . . LOSS Than Cortified Reporting Limits N.A. . Analysis not Requested F - Indicates filtered sample analysis

8

Table H-4
COMPLETE LISTING
Of
SAMPLE AND DUDITIONS

PBGB NO. 27 10/05/90

F I Mercury I I Jarsenic 08048 I OIND/DIND 8 2080 | Seni - volatilles y votatiles

DUPLICATE - WCSVSA02 CONFINED

0.3300 0.3000 0.3000 0.0330 0.3000 0.3000 0.5000 0.900 0.0330 0.6000 2.6000 0.1100 0.3100 0.0370 0.0450 0.0330 HECLE NO
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IG field number - wcsv5001 Site ID - M-1_SOIL-B SIte tVDe - CMPH Sample Date - 89129 (julian)

1121CE LT 0.3900 120CLB LT 0.1100 CPMS LT 4.4000

7 2000 0.1330 TDCQ, LT Dame C

L.T. . LOSS Thun Cortified Reporting Limits N.A. . Analysis not requested for indicates filtered sample analysis

•		Semi -voia [185	3	5280			5400 F	408G
FIELD_MO	· WCSVSB01	FIELD_NO . WCSV5801 CONLINUED						
ווסמנ ונ	1.7000	COPPL NO	0.1400	CP16502	13	9.0100		
130CE 17	1.7000	12EPO4	0.1120	<u> </u>	5	1.4500		
120CLE LT	0.5600	130CLB LT	0.1300	8	=	3.1200		
13046 LT	0.7400	140GLB LT	0.0980	OKAT	=	1.7400		
BOH70 LT	0.3600	245TCP LT	0.1000					
C646 LT	0.2500	246TCP LT	0.1700					
כמי ונ	0.2500	MOGE IT	0.1900					
ספמוז וד	1.5000	24DMPN LT	0.6900					
040,3 17	0.2900	240MP LT	1.2000					
CL C645 LT	1.5000	24DNT LT	0.1400					
DBCP 1.1	2.4000	260NT LT	0.0650					
9C)	314.0	אמף נז	0.0600					
11 5000	20.0000	20MP LT	0.0360					
ETCSHB LT	0.3800	SHEAP LT	0.0440					
MC646 LT	0.2500	5	0.0390					
#18K LT	0.7300	ZHAWIL LT	0.0620					
Tale LT	0.2500	17	0.1400					
TRCLE LT	0.5400	330CBD ND	6 .3000					
XYLEN LT	4.9000	BUMIL LF	0.4500					
		MEDIZC ND	0.5500					
		ABRIPPE NO	0.0330					
		ACANIL LT	0.1100					
		4CL3C LT	0.0450					
		אמושב וו	0.0330					
		17	0.2400					
		ALANIL LT	0.4100					
		17	1.4000					
		ABHC ND	0.2700					
		ACHLOR ND	0.3300					
		AENSLF NO	0.6200					
		ALDIN LT	0.3000					
		ALDRN NO	0.3300					
		MARNE LT	0.0360					
		MAPR LT	0.0330					
		ANTIC NO	0.0330					
		ATZ LT	9.3000					
		B2CEXH LT	0.0890					

13.6000 30.4000 73.2000

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r 1 10° r 1 metais a 1

f i mercury i i a i

iarsenic

1 05045

Dimo/omio i

L.T. . Less Than Certified Reporting Limits M.A. . Analysis Not Requested F - Indicates fillered sample analysis

Page NO. 21 10/05/90

Table M-4
CONDIECE LISTING
Of
Sample and Dupilcate

f i Mercury

|Arsenic

FIELD_NO - WCSVSB01 CONTINUED

| Sent-votatiles

I volatiles

0.2000	0.0330	0.6200	0.1700	0.2500	0.2100	0.1700	0.1700	0.6200	0.8500	6.1000	0.2500	0.0660	0.1900	0.1200	0.1200	0.6000	6.2000	0.1500	2.0000	0.9000	0.3000	0.3000	0.2100	0.3000	0.2700	0.0350	1.0000	3.0000	0.1400	1.0000	0.4000	0.3000	0.3100	0.1700	0.0610	6.1900
B2CIPE LT	_	•	_	_	-	_	_	-	_	_	_	_	_	_	_	_	_		-	_	_	_	_	_	_	_	_	_	-	_	_	_	_	_		_

L.T. - Less Than Certified Reporting Limits N.A. - Armiysis not Requested F - Indicates filtered sample armiysis

Page No. 30 10/05/90

Table M-4
Complete Listing
Of
Sample and Dupitcate

91 13	i i metats	-	-
f I Mercury	=	-	-
larsenic	_	-	_
I MPA/MPA	_	_	
I OSCMS	_	_	
Olimp/Diamp			
1 DBCP	_	_	
1 OCPs	_	_	
800			
Semi-volatiles OSCs	-	_	-
i voiatifes (_	_	,

FIELD_NO - WCSVSBOT CONLINUED

0.5000	0.4500	0.5300	0.5300	0.6200	0.0660	0.0330	0.3300	0.2300	0.1300	0.3300	0.2900	0.41.20	0.0330	0.1700	0.3300	0.7900	0.0370	0.0450	0.1400	0.2000	0.1900	0.3000	1.4000	1.4000	1.4000	1.4000	2.000	2.3000	2.6000	1.3000	0.0330	0.1100	0.3000	0.600	0.3100	0.5000
	_	-	_	_	_		_	-	_	-	-			_	_	-	_	_	_	_			_	_		_	_	_	-	-	_	_	-	PPD0E 1.T	_	

L.T. - Less Than Certified Reporting Limits M.A. - Analysis Not Requested F - Indicates filtered sample analysis

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Table M-4
COMPLETE LISTING
Of
SAMPLE AND CUPLICATE

<u>.</u> 5	\$ me(2)\$	-	1 0
f wercury	-	-	10
IArsenic	_	_	_
I IMPA/MPA	_	_	
1 OSCHS	_	_	
dumo/dujo i	_	_	
1 08CP	-	_	
I OCPS	_	_	
1 08CS	_	_	
Semi-volatiles 05Cs	_		
l volatiles	_	_	

FIELD_NO - WCSVSB01 CONTINUED

0.3100	0.9000	0.0330	0.6000	2.6000
PPDOT ND	PRITH LT	ž.	SUPONA LT	TXPIEN NO

OUPLICATE - WCSV5802 SITO 10 - M-1_SOIL-B SITO TYDO - CAPH SANDIO DATO - 89129 (JULIAN)

Ε.

6.3800 17.5000 13.0000 15.2000 62.2000

	0.0400 812	5	2.0400 CL6CP LT	0.0018 N.A.	DIMP LT	0.1140 CLC2A LT	35, 5000 N.A.	ş	150,0000 D HG	20.0000 D
12DCLB LT	0.1100 CPMS	5	4.4000				4, 2000			
_	0.1400 CPMS02 LT	71.	9.0100							
130CLB LT	0.1300 DITH	5	1,4500							
140CLB LT	0.0980 DMDS	=	3.1200							
2457CP LT	D. 1000 0XAT	1.	1.7400							
	0.1700									
	0.1800									
	0.6900									
5	1.2000									
	0.1400									
	0.0850									
	0.0600									
	0 0360									
	0.0490									
ez	6.0290									
	0.0620									
	0.1400									
	6.3000									
	0.4500									
	0.5500									
	0.0330									
	0.8100									
	0.0950									
ACLPPE LT	0.0330									
	0.2400									
111	0.4100									
ב	1.4000									
ABHC NO	0.2700									

PROS NO. 32 10/05/40

table M-4 Complete Histing of Sample and Duplicate

f i wercury

IArsenic

NPA/MPA

OS CAS

diamo/diamo

1 08CP

800

- 863

| Semi-volatites

1 volatilles

DUPLICATE - WCSVSB02 CONLINUED

0.3300	0.3000	0.3300	0.0360	0.0330	0.0330	0.3000	0.0590	0.2000	0.0330	0.6200	0.1700	0.2500	0.2100	0.2700	0.1700	0.6200	0.8500	6.1000	0.2500	0.0660	0.1900	0.1200	0.1200	0.6000	6.2000	0.1500	2.0000	0.9000	0.3000	0000	0.2100	9.3000	0.1700	0.0350	1.0000
ACHLOR NO	-	_	_	_	_			_	_	_	_	_	_	_	-	_	-	_				_	_												

L.T. . Less Then Certified Reporting Limits M.A. . Analysis NOT REQUESTED F - Indicates filtered sample analysis

Table H-4
COMPLETE FISTING
Of
SAMPLE AND DUPLICATE

jarsenic 1

1 IMPA/MPA

1 OSCHS

Ormo/Omio i

500 I

i semi-volatiles | 05Cs

i volatiles

DUPLICATE . WCSVSB02 CONTINUED

3,6000 0,2400 1,0000 0,4000 0,3000 0,1700	0.0610 0.1900 0.5000 0.4500 0.5300 0.5300 0.6200 0.0330 0.2300 0.2300 0.2300 0.2300 0.2300 0.2300 0.2300	0.0330 0.3700 0.3300 0.3700 0.0450 0.1400 0.1900 0.1900 0.3000 1.4000 1.4000 1.4000 1.4000
0009 LT 01189 LT 01174 LT 01084 LT	DNOP NO ENDRAN LT ENDRA NO ENDRA NO ENDRA NO ENDRA NO ENDRA NO ENDRA NO ENDRA NO ENDRA NO ENDRA NO HACLE NO HAC	15.00+R (T 1.1N ND MEXCLR ND METHY (T NADMEA ND NA

L.T. - Loss Than Cortiliod Reporting Limits N.A. - Analysis Not Requested F - Indicates filtered sample analysis

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7

P800 NO. 10/05/90

Table H-4
CONDISTS INC
Of
SAMPLE AND DUBILICATE

1 08CP 000

- 08C

| Semi-volatilles

1 Dimp/Damp

f I Mercury I I & I

|Arsen!c

I IMPA/MPA

1 OSCHS

DUPLICATE . WCSVSB02 CONCLINUED

6.1300 6.1103 6.1103 6.3000 6.3000 6.3100 6.3100 6.9000 6.9000 6.6000 7.6000 PCESSA NO PCESSO Site type - BORE Sample Date - 89144 (julian) ------ Field number - WCD15041 Site ID - M180RE001

0,0019 N.A. 0,0018 0,0230 0,0033 2.0400 ALONE UT 4.4000 CL6CP UT 4.4100 CLDW UT 9.0100 DLONE UT 1.4200 PRODE UT 1.7400 PRODE UT 1.7400 PRODE UT

1.7600 27.6000 23.3000 6.6000

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0.0500

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49.7000 N.A.

9.1140 CLCZA 9.1330 TDCC LT

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f - indicates fillered sample armiysis L.T. . Less Then Certified Reporting Limits N.A. . Amérysis not Requested

Table H-4
COMDIETE LISTING
Of
Sample and Duplicate

rory F 10P 	11 0.0500 0 00 11 0.7400 00 32.0000 00 19.1000 PB 11 0.4000	0.1540 N.A.	11 0.0500 CR 11 0.7400 CR 14,0000 CU 10,5000 PB 10,5000
IATSENIC F I METCUTY	AS LT 2.5000 D HG	AS 110.0000 HG	AS LT 2.9000 HG
I IMPA/MPA	48. 8000 H.A. 5. 3800		45.4000 N.A. 5.0100
1 05045 05045	DIMP LT 0.1140 CLC2A	Jutian) N.A. N.A. N.A. N.A.	Cjulian) Diwe LT 0.1140 CLC2A Dwww LT 0.1330 TDCCL
6	Sample Date - 69144 (jullan) LT 0.0019 M.A. DII LT 0.0018 LT 0.0030 LT 0.0058 LT 0.0054 LT 0.0024	Sample Date - 89150 (N.A. 10 - 89150 (Julian) N.A.	Sample Date - 89145 - 1019 N.A. 018 033
863	SITE TYPE - BORE LT 2.0400 ALDBN LT 4.4000 CL6CP 10 LT 4.8100 CLDM 102 LT 9.0100 DLDBN 11 LT 3.1200 ENDBN 11 LT 3.1200 ENDBN 11 LT 3.1200 FPDOF	Site to M.A.	SITE ID - MTBOREOOS SITE LYDE - BORE BTZ
i somi-volatites	FIELD_MO - WCD15041 CONTINUED CLEE LT 0.3500 MCH LT 4.9000 DUPLICATE - WCD15042 S116 1b - M160RE001 CPM CPM CPM CPM CPM CPM CPM CPM CPM CPM	M.A. L.T. M.A. DUPLICATE - WCD35071 SITE ID - MTBDRE003 N.A. L.T. M.A. L.T. M.A. N.A. L.T. M.A.	L.T. L.T. L.T. C.C. C.
Volatiies	FIELD-NO - W TICKE LT TRCLE LT ANTEN LT DUPLICATE - 1	N.A. DUPLICATE + V.A.	L.T.

L.T. . Less Than Certified Reporting Limits M.A. . Analysis Not Requested F - Indicates filtered sample analysis

Table H-4 Complete HSTING Of Sauple and Duplicate

volatiles	SEB! - VOI B! 185	08CS		560		08 CP	Grand/district	1 05 CMS	1 taba/apa 1 1	IATSenic 1 1	یو		F I METCUTY I I		f t tCP 1 r metals 8 r	\$!
BUPLICATE •	DUPLICATE - WCD55042 Site to - MIBOREOUS T. L.T. COMM CPM CPM CPM CPM CPM CPM CPM CPM CPM C		2	283229	Sample 17 17 17 17 17 17 17 17 17 17 17 17 17	89145 (JUITAM) N.A.	CHAMP LT	0.11.0 C.C2A	45.5000 M.A. 5.0100	হ	5	2.5000 D HG	5 9	0 .0500 D	8 5 3 2 4	5 5	0.7400 14.9000 10.6000 8.4000 89.4000
\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \	OXAT LT 1.7	1 e i b	TI 1.74	1.7400 PPOOT PPOOT 06 \$110 tW	######################################	24 70 Sample Date - 89143 (Jullan)	(Jullan)										
N.A. BUPLICATE •	I.A. L.T. N.A. DUPLICATE - WCD60192 STIG TO - ATBOREGOD		N.A. 511e type - BORE		Sample Date	N.A. Sample Date - 89143 (Jullan)	Ä,	ď.	₹. 2	খ	11 3	2.5000	13 94	0.0500	Ä.		
٠ ٢	L.F.	٠ ٢		ж. Ұ.	-	A.A.	R.A.	ર્લ સ્ટ	' e '' k	\$	2	12.9000 D HG	¥	2.6000 D N.A.	¥.		
	Field number - WCD6WG41 Slie 1D - M16CRED06	1.010.1	11 BORE 006	Site tw	Site type - BORE SA	Sample Date - 89143 (jullan)	3 (Jullan)										
11370E UT 11370E UT 1130CE	0.3900 ALDM LT. 0.3000 612 0.3900 ATZ LT 0.3000 CPM 1.7000 CL6CT LT 0.4000 CPM 1.5000 CL6W LT 2.0000 011 0.3400 CPMS LT 0.9000 011 0.2400 CPMS LT 0.3000 WAI 1.7700 CPMS LT 0.3000 WAI 1.7700 CPMS LT 0.3000 0.2500 DECP LT 0.3000 0.2500 DECP LT 1.0000 0.2500 DECP LT 0.3000 0.2500 DECP LT 1.0000 0.2500 DECP LT 1.0000 0.2500 DEMP LT 1.0000 0.2500 DIMP LT 0.4000			2.0400 ALDRN 4.400 CLG/P 4.400 CLG/P 9.700 CLG/P 9.700 BLD/P 1.7400 BLD/P 1.7400 BLD/P PPDDT PPD	1	₹	11 days	0.1140 CLCJA LT	35.5000 N.A. 4.7000	*	1 2000	1 2000 · 0000 · 0000	¥	980.000	8 8 8 8 8	้ ธ ธ ้	910.0000 4.7000 1.4.0000 28.4000 28.4000

L.T. . Less Than Certiffed Reporting (imits N.A. . Analysis Not Requested F - Indicates fillered sample analysis

3 PEGE NO. 10/05/90

Sample and Duplicate Table H-4 Complete LISTING Of

F 1 10° - 1 Metals - 0 F | Mercury I Arsenic I **80089** DIMO/ONTO I 1 08CP 8 - 85CS I Semi-volatiles 1 votatilles

FIELD_NO - WCG6MD41 CONLINUED

20.0000 1500R LT 0.3000 MLTH LT 0.3500 004T LT 0.7300 PFODE LT 0.3500 PFODE LT 0.5400 FFO DECS LT ETOMS LT MISK LT TCLE LT MACE LT MACE LT Sample Date - 69143 (Julian) DUPLICATE - WOSHOA2 SITE ID - INBOREDOS

CLCJA LT 35.5000 N.A. TOCL LT 4.2000 ¥. 0.0019 N.A. 0.0010 0.0030 0.0033 0.0054 0.0011 1.4500 DLDBN 3.1200 ENDBN 1.7400 1500R PPDDE PPDDE 6745 LT CPHSO2 LT CPHSO2 LT DATA LT OWAT LT 0.2300 0.2300 1.3000 1.3000 1.3000 1.4000 0.2300 0.2300 0.2300 0.2300 0.2300 0.2400 11110 LT
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APPENDIX I-WELL DEVELOPMENT SUMMARY TABLE

WELL DEVELOPMENT SUMMARY TABLE

Well No.: 36001

Installation Date: NA

Well Description: 4-in. PVC

Depth to Bottom; BGS: 29.52 feet Elevation: 5233.8 feet

Depth to Water; BGS: 11.7 feet Elevation: 5251.7 feet

Ground Elevation: 5263.3 feet

Volume Calculation: $(29.5 - 11.7) \times 0.653 + (29.5 - 11.7) \times 0.591$ 1 Vol = 22.1 gal 5 Vol = 110.5 gal

Geologist	E. Gonzalez	E. Gonzalez	K. Doeden	K. Doeden
Color	yellow-gray light yellow light yellow light yellow	light gray light gray clear	NA milky-brown it. milky-brown	lt, milky-brown NA
Conductivity	710 1300 1320 1320			
됪	7.22 7.17 7.12 7.08	7.09 7.23 7.12	7.19 7.22	7.15 NA
Cumulative Total (gal)	09 09 80	110 130 165	ð 8 8	113
Amount Removed (gal)	15 25 20 20	30 20 35	58 8 5 52 8 8 5	- 64 44 74 74
Method Purged	Bail	dun d	Bail Bail	Bail
Date Sampled			5-5-89	6-7-9
	5-2-89	\$-5-89	6-7-89	

WELL DEVELOPMENT SUMMARY TABLE

Well No.: 36054

Installation Date: NA

Well Description: 2-in. PVC

Depth to Bottom; 8GS: 21 feet Elevation: 5238.3 feet

Depth to Water; 8GS: 7.8 feet Elevation: 5251.5 feet

Ground Elevation: 5259.3 feet

Volume Calculation: $(21 - 7.8) \times 0.163 + (21 - 7.8) \times 0.726$ 1 Vol = 11.7 gal 5 Vol = 58.6 gal

Geologist	T. Terry	J. Dodson	J. Dodson
Color	¥ ¥ :	NA NA lime green	∢ ∢ ≱ ⊉
Conductivity	2,700 5,700	006'9 NA NA	3,250 3,500
핇	7.66	8.13 KA 43	7.73
<i>U ⊢</i> 1		4.5 6.5 7.25	
Amount <u>Removed (gal)</u>	1.5/dry 1.0/dry	2/dry 2/dry 0.75/dry	2.5/dry 2/dry
Method Purged	Pump	dund bund	Bail Bail
Date Sempled			6-13-89
Date Purged	6-8-89	6-9-89 6-12-89	

Well No.: 36055

Installation Date: NA

Well Description: 2-in. PVC

Depth to Bottom; BGS: 24.7 feet Elevation: 5227.6 feet

Depth to Water; 8GS: 8.1 feet Elevation: 5244.2 feet

Ground Elevation: 5252.3 feet

Volume Calculation: $(24.7 - 8.1) \times 0.163 + (24.7 - 8.1) \times 0.726$ 1 Vol = 14.8 gal 5 Vol = 73.8 gal

Geologist	T. Terry				T. Terry	J. Dodson	T. Terry	T. Terry
Color	¥	KA	¥2	¥N	Υ×	₹×	black	¥ X
Conductivity	006'6	¥	11,800	13,000	00,700	10,000	9,100	10,200
됩	7.36	¥	7.74	7.86	7.24	7.0	7.51	7.4
Cumulative Total (gal)	-	2.5	3.0	3.5	9.9	9.0	11.5	11.5
Amount Removed (gal)	•	1.5/dry	0.5/dry	0.5/dry	2.5/dry	3/dry	2.5/dry	¥ Z
Method Purged	Pump				Pump	Bail	Bail	Bail
Date Sampled								6-13-89
Dete Purged	68-6-9				6-6-9	6-12-89	6-13-89	

Depth to Water; 8GS: 1 foot Elevation: 5253.2 feet

Ground Elevation: 5254.2 feet

Depth to Bottom; BGS: 20.2 feet Elevation: 5234 feet

Well No.: 36058

Installation Date: NA

Well Description: 2-in. PVC

Volume Calculation: $(20.2 - 1) \times 0.163 + (20.2 - 1) \times 0.726$ 1 Vol = 17 gal 5 Vol = 85.3 gal

Geologist	T. Terry				J. Dodson			T. Terry		
Color	brown	yellow	yellow	¥	brown	lime green	Ϋ́	¥N		
Conductivity	13,700	13,000	13,000	¥	12,000	12,800	Ϋ́	12,200	11,800	11,800
핇	7.48	7.44	7.40	¥	7.05	6.90	¥	7.35	7.43	7.45
Cumulative Total (gal)	0.5	10 45	ĸ	8	¥	150	175	N.	7 Bails	17 Bails
Amount Removed (gal)	0.5	9.5 35	20	15	Initial	09	52	Initial	7 Bails	10 Bails
Method Purged	dund				ownd			Bail	,	
Date Sampled								A-12-80		
Date Purged	6-5-89				4.12.80	50.50				•

Well No.: 36067

Installation Date: NA

Well Description: 2-in. PVC

Depth to Bottom; BGS: 15.1 feet Elevation: 5226.1 feet

Depth to Water; 8GS: 6.9 feet Elevation: 5234.3 feet

Ground Elevation: 5241.2 feet

Volume Calculation: (15.1 - 6.9) \times 0.163 + (15.1 - 6.9) \times 0.726

1 vol = 7.3 gal	5 Vol = 36.5 gal	

Geologist	E. Gonzalez E. Gonzalez		
		clear gray	
Conductivity	2600	2720 2780	
됩	6.9	6.82	
Cumulative Total (gal)	~ %	388	
Amount Removed (gal)	7	13 16 Initial	
Method Purged	Pump	Bail	
Date <u>Sampled</u>		4-52-89	
Date Purged	4-56-89		

WELL DEVELOPMENT SUMMARY TABLE

Well No.: 36075

Installation Date: NA

Well Description: 2-in. PVC

Depth to Bottom; BGS: 15.7 feet Elevation: 5237.6 feet

Depth to Water; BGS: 9.4 feet Elevation: 5243.9 feet

Ground Elevation: 5253.3 feet

Volume Calculation: (15.7 - 9.4) \times 0.163 + (15.7 - 9.4) \times 0.726 1 Vol = 5.6 gal 5 Vol = 28 gal

Geologist	1. Terry					T, Terry
Color	¥.	¥.	K X	¥	NA	ν. V
Conductivity	1670	1600	1630	1630	¥	ΑZ.
됩	7.85	7.93	7.88	7.86	¥	Y.
Cumulative Total (gal)	Initial	~	15	\$2	\$	\$
Amount Removed (gal)	Initial	~	80	9	7	NA NA
Method Purged	Bail					Bail
Date Sampled						6-12-89
Date Purged	A-15-80	5				

* Well 36075 was sampled on 4 different occasions: 4-18-89; 6-2-89; 6-6-89; 6-15-89

Depth to Water; BGS: 13 feet Elevation: 5239.4 feet

Ground Elevation: 5252.4 feet

Depth to Bottom; BGS: 15.4 feet Elevation: 5237 feet

Well No.: 36076

} }

Installation Date: NA

Well Description: 2-in. PVC

Volume Calculation: (15.4 - 13) \times 0.163 + (15.4 - 13) \times 0.726 f Vol = 2.1 gal 5 Vol = 10.7 gal

Geologist	1. Terry	•			1. Terry	•			T. Terry
Color	tan		tan	ten	clear	brown	¥	X	¥¥
Conductivity	3,150	¥	3,820	3,900	3,450	3,200	3,200	X	NA
퓚	72.7	¥	7.02	7.19	7.16	7.21	7.25	XX	¥.
Cumulative Total (gal)			~						
Amount Removed (gal)		3/dry	_	6/dry	Initial	m	m	٣	NA
Method Purged	Pump				Bail				Bail
Date Sampled									6-14-89
Date Purged	68-5-9	-		, ;	6-14-89				

Installation Date: MA

Well Description: 2-in. PVC

Depth to Bottom; 8GS: 23.2 feet Elevation: 5220.5 feet

Depth to Water; BGS: 14.2 feet Elevation: 5229.5 feet

Ground Elevation: 5243.7 feet

Volume Calculation: $(23.2 - 14.2) \times 0.163 + (23.2 - 14.2) \times 0.726$ 1 Vol = 8 gal 5 Vol = 40 gal

Geologist	E. Gonzalez	E. Gonzalez
Color	it. gray it. gray NA	clear
Conductivity	12,200 11,500 NA	11,000 11,300 NA
집	7.39 7.46 NA	
Cumulative Total (gal)	w n o	5 2 2 5
Amount Removed (gal)	m vr t	4 dry
Method Purged	Pump	Bail
belumes each		5-1-89
•	<u>5-1-89</u>	

Installation Date: NA

Well Description: 2-in. PVC

Depth to Bottom; BGS: 12.3 feet Elevation: 5223.7 feet

Depth to Water; BGS: 6.7 feet Elevation: 5229.3 feet

Ground Elevation: 5236 feet

Volume Calculation: $(12.3 - 6.7) \times 0.163 + (12.3 - 6.7) \times 0.726$ 1 Vol = 5 gal 5 Vol = 25 gal

Geologist	8. Kedenkamp B. Kedenkamp	E. Gonzelez
Color	\$ \$ \$ \$ 1	£ £ £
Conductivity	15,600 15,500	NA 15,500
됩	NA 7.12 7.04	
	28 38 38	
Amount Removed (gal)	23 5 10	5 S Initial
Method Purged	Pump Bail	Bail
Date Sampled		4-25-89
Date Purged	4-13-89	

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Installation Date: NA

Well Description: 2-in. PVC

Depth to Bottom; BGS: 13.3 feet Elevation: 5216.9 feet

Depth to Water; 8GS: 1.7 feet Elevation: 5228.5 feet

Ground Elevation: 5230.2 feet

Volume Calculation: $(13.3 - 1.7) \times 0.163 + (13.3 - 1.7) \times 0.726$ 1 Vol = 10.3 gal 5 Vol = 51.5 gal

Geologist	E. Gonzalez	E. Gonzalez
Color	4 4 4 4	Z Z
Conductivity	790 790 800 800	790 NA
핆	7.43	7.41 NA
Cumulative Total (gal)	10 20 35	ት የአ የአ
Amount Removed (gal)	555	D C N
Method Purged	Pump	Bail
Date Sampled		5-2-89
Date Purged	5-2-89	

Well No.: 36087

Installation Date: NA

Well Description: 2-in. PVC

Depth to Bottom; BGS: 15.4 feet Elevation: 5243.2 feet

Depth to Water; 8GS: 10.7 feet Elevation: 5247.9 feet

Ground Elevation: 5258.6 feet

Volume Calculation: (15.4 - 10.7) \times 0.163 + (15.4 - 10.7) \times 0.726 1 Vol = 4.2 gal 5 Vol = 21 gal

<u> 38 80 090 58 58 58 58 58 58 58 5</u>	E. Gonzalez		E. Conzalez					E. Gonzalez
20/02	¥	¥	¥¥	Y.	¥x	N.	NA	¥
Conductivity	800	810	089	780	780	230	780	₹ N
핆	7.67	7.31	7.95	7.97	7.95	7.89	7.88	¥ X
Cumulative <u>Total (gal)</u>	~	m	m	4	٠	9	~	^
Amount Removed (gal)	2/dry	1/dry	Initial	1/dry	1/dry	1/dry		N.
Method Purged	Bail		. Fasi	, ; ;				Bail
Date Sampled								4-27-89
Date Purged	08-76-7	10-07-4	7.37.80	40-17-4				

Well No.: 36088

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Installation Date: NA

Well Description: 2-in. PVC

Depth to Bottom; BGS: 25.2 feet Elevation: 5218.6 feet

Depth to Water; 8GS: 16 feet Elevation: 5227.8 feet

Ground Elevation: 5243.8 feet

Volume Calculation: (25.2 - 16) \times 0.163 + (25.2 - 16) \times 0.726 1 Vol = 8.2 gal 5 Vol = 41 gal

Geologist	E. Gonzalez						E. Gonzalez
Color	gray	××	it. gray	××	it. gray	it. gray	¥X
Conductivity	10,800	¥¥	11,200	YN	11,300	11,200	42
집	7.52	¥	7.59	¥	7.58	99.7	2
Cumulative Total (gal)	4	∞	5	12	16	2	K X
Amount Removed (gal)	4	4/dry	~	2/dry	4/dry	4/dry	
Method Purged	Pump						Bail
Date Sampled							4-28-89
Date Purged	4-28-89						

Installation Date: 1-2-87

Well Description: 4-in. PVC

Depth to Bottom; BGS: 16.8 feet Elevation: 5237.3 feet

Depth to Water; 8GS: 10.5 feet Elevation: 5243.6 feet

Ground Elevation: 5254.1 feet

Volume Calculation: (16.8 - 10.5) \times 0.653 + (16.8 - 10.5) \times 0.591 1 Vol = 7.8 gal 5 Vol = 39.2 gal

Geologist	T. Terry	I. Terry
color	NA NA Clear	£
Conductivity	6,000 NA 6,000	NA NA NA
됩	8.2 NA 8.3	NA NA NA NA NA NA NA NA NA NA NA NA NA N
Cumilative Total (gal)	12 24 24 24	366
Amount Removed (gal)	3 9/dry 12/dry	13/dry 2 NA
Method Purged	qua	Bail
Date Sampled		6-14-89
Date Purged	6-14-89	

Installation Date: NA

Well Description: 4-in. PVC

Depth to Bottom; BGS: 25.7 feet Elevation: 5210.1 feet

Depth to Water; BGS: 7.86 feet Elevation: 5227.9 feet

Ground Elevation: 5235.8 feet

Volume Calculation: (25.7 - 7.86) \times 0.163 + (25.7 - 7.86) \times 0.591 t Vol = 22.2 gal 5 Vol = 111 gal

Geologist	E. Gonzalez	E. Gonzalez	E. Gonzalez
Color	4 4 4 4	¥¥:	≨ ≨
Conductivity	10,200	10,400	10,000 KA
퓚	7.32	7.38	7.33 NA
Cumulative Total (gal)	20 45	. 2 %	120 120
Amount Removed (gal)	2 5	3 2 8	¥ 52
Method Purged	Bail	Bail	Bail
Date Sampled			68-86-7
Date Purged	4-27-89	28-80	

Well No.: 36187

Installation Date: 5-8-89

Well Description: 4-in. PVC

Depth to Bottom; BGS: 21.6 feet Elevation: 5219.9 feet

Depth to Water; BGS: 13.8 feet Elevation: 5227.7 feet

Ground Elevation: 5241.5 feet

Volume Calculation: (21.6 - 13.8) \times 0.653 + (21.6 - 13.8) \times 0.591 1 Vol = 9.7 gal 5 Vol = 48.5 gal

Geologist	D. Bufo	D. Bufo	T. Terry				1. Terry
Color	V.	KA	¥¥	¥	¥	AN	¥.
Conductivity	9200	5700	009	5100	0009	5700	¥.
퓝	7.62	7.48	7.36	7.36	7.43	7.44	¥.
Cumulative Total (gal)	10.5	28	38	97	24	29	26
Amount Removed (gal)	10.5/dry	17.5/dry	10/dry	8/dry	8/dry	5/dry	N A
Method Purged	Pemp	P.C.	GEN d	•			Bail
Date Sampled							6-7-9
Date Purged	5-16-89	5-18-89	6-7-9				

Well No.: 36188

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Installation Date: 5-4-89

Well Description: 4-in, PVC

Depth to Bottom; BGS: 22 feet Elevation: 5218.2 feet

Depth to Water; 8GS: 11.9 feet Elevation: 5228.3 feet

Ground Elevation: 5240.2 feet

Volume Calculation: (22 - 11.9) \times 0.653 + (22 - 11.9) \times 0.591 1 Vol = 12.5 gal 5 Vol = 62.5 gal

Geologist	D. Bufo		D. Bufo	1. Terry				T. Terry
Color	orange/brown	¥	clear	brown	¥	¥	KA	KA K
Conductivity	15,900	¥	17,000	11,200	15,500	٧×	15,000	٧×
됩	6.9	¥	7.03	7.44	7.01	¥	6.97	K.A
Cumulative Total (gal)	-	\$	25.5	25.5	30.5	32.5	44.5	44.5
Amount Removed (gal)	-	14	10.5	Initial	٧.	2/dry	12	NA
Method Purged	Bail		Pump		Pump			Bail
Date Sampled								6-7-9
Date Purged	5-18-89		5-22-89	6-2-89				

Depth to Water; BGS: 11.3 feet Elevation: 5228.6 feet

Ground Elevation: 5239.9 feet

Depth to Bottom; BGS: 22.9 feet Elevation: 5217 feet

Well No.: 36189

Installation Date: 5-2-89

Well Description: 4-in. PVC

Volume Calculation: (22.9 - 11.3) x 0.653 + (22.9 - 11.3) x 0.591 1 Vol = 14.4 gal 5 Vol = 72 gal

Geologist	E. Gonzalez E. Gonzalez E. Gonzalez T. Terry	T. Terry
Color	orange/brown yellow orange/brown orange/brown brown	brown NA
Conductivity	990 1,100 9,000 11,000 12,000	11,900 12,100 NA
핇	7.27 7.55 7.52 7.40 7.02	7.06 7.11 7.11
Cumulative Total (gal)	35 88 88 85 25 £	 25.25.55
Amount Removed (gal)	16 12 Initial 11 12/dry	0.5/dry 12.5/dry 8 NA
Method Purged	Bail Bail Bail Pump	Bail
Date Sampled		6-7-9
Date Purged	5-4-89 5-5-89 5-16-89 6-6-89	

Well No.: 36190

Installation Date: 4-26-89

Well Description: 4-in, PVC

Depth to Bottom; BGS: 19.9 feet Elevation: 5219.8 feet

Depth to Water; BGS: 8.7 feet Elevation: 5231 feet

Ground Elevation: 5239.7 feet

Volume Calculation: (19.9 - 8.7) \times 0.653 + (19.9 - 8.7) \times 0.591 1 Vol = 13.9 gal 5 Vol = 69.5 gal

Geologist	E. Gonzalez		E. Gonzalez	E. Gonzalez	E. Gonzalez	K. Doeden			K. Doeden		T. Terry				T. Terry
Color	¥	Υ¥	KA	¥X	KA	NA NA	¥X	¥¥	¥¥	KA K	٨A	¥.	X A	K.A	Y Y
Conductivity	7,000	¥	2,000	6,700	8,000	7,700	7,200	6,950	6,350	9,950	7, 100	XX XX	7,100	N.	NA
刮	7.39	¥	7.38	7.41	7.58	7.09	7.21	7.16	7.20	7.15	7.23	KA	7.25	¥X	K A
Cumulative Total (gal)	12	1 6	32	25	19	9	5	15	15	2	20	35	37	75	75
Amount Removed (gal)	12	4	16	15/dry	14/dry	•	7	'n	Initial	2	Initial	15/dry	~	~	Y Y
Method Purged	Bail		Bail	Bail	Bail	Bail			Bail	Bail	Bail				Bail
Date Sampled										6-9-9					6-12-89
Date Purged	5-1-89		5-2-89	2-4-89	2-5-89	6-2-89			6-9-9		6-12-89				

Depth to Water; 8GS: 35 feet Elevation: 5213.3 feet

Ground Elevation: 5248.3 feet

Depth to Bottom; 8GS: 38.3 feet Elevation: 5210 feet

Well No.: 36191

Installation Date: 5-11-89

Well Description: 4-in. PVC

Volume Calculation: $(38.3 - 35) \times 0.653 + (38.3 - 35) \times 0.591$ 1 Vol = 4.1 gal 5 Vol = 20.5 gal

Geologist	D. Bufo T. Terry K. Doeden T. Terry T. Terry T. Terry
Color	O N N N N N N N N N N N N N N N N N N N
Conductivity	4,200 6,400 5,000 6,500 4,360 4,360
띪	8.37 7.83 7.16 7.27 NA 7.21 7.21
-	1.5 7.0 9.5 9.5 12.0 12.5
Amount Removed (gal)	1.5 5.5 2.5/dry Initial 2.5/dry 0.5/dry
Method Purged	Bail Bail Bail Bail Bail
Date Sampled	6-12-89
Date Purged	5-24-89 6-2-89 6-6-89 6-8-89

Well No.: 36192

Installation Date: 5-19-89

Well Description: 4-in. PVC

Depth to Bottom; BGS: 65.6 feet Elevation: 5188.1 feet

Depth to Water; BGS: 29.6 feet Elevation: 5224.1 feet

Ground Elevation: 5253.7 feet

Volume Calculation: (65.6 - 26.6) x 0.653 + (65.6 - 29.6) x 0.591 1 Vol = 44.8 gal 5 Vol = 224 gal

Geologist	D. Bufo		D. Bufo	D. Bufo		K. Doeden	K. Doeden		1. Terry			I. Terry	I. Terry		1. Terry					T. Terry
Color	clear	NA	¥N	clear	¥	brown	brown	¥	clear	brown	NA.	KA K	. brown-black	4 2	clear	brown-black	¥	black	¥	NA
×													3,000 dk							
됩	7.47	¥	¥	7.5	٧	7.13	7.13	¥	7.29	7.30	¥	7.11	7.22	¥	7.26	7.36	¥	7.31	7.45	7.25
Cumulative Total (gal)	-	35	9	29	8	135	160	75	165	506	211	214	239	241	242	564	282	585	295	295
Amount Removed (gal)	-	34/dry	25/dry	. ~	28/dry	45/dry	×	•		5	2	m	\$2	2/dry	_	22	18/dry	7/dry	6/dry	N N
Method Purged	Bail		Beil	Beil		Beil	Bail		Beil			Pump	Pump		Bail					Bail
Date Sampled																				6-13-89
<u>Date Purged</u>	5-22-89		5-23-89	5-24-89		6-2-89	6-9-9		6-8-89			68-6-9	6-6-9		6-12-89					

Well No.: 36193

Installation Date: 5-17-89

Well Description: 4-in. PVC

Depth to Bottom; BGS: 16.6 feet Elevation: 5245.2 feet

Depth to Water; 8GS: 9 feet Elevation: 5252.8 feet

Ground Elevation: 5261.8 feet

Volume Calculation: (16.6 - 9) x 0.653 + (16.6 - 9) x 0.591 1 Vol = 9.5 gal 5 Vol = 47.3 gal

Geologist	D. Bufo	•	D. Bufo	J. Dodson				K. Doeden				•	K. Doeden	J. Dodson			•	J. Dodson	
Color	Brown	NA NA	Brown	Brown	Brown	Brown	¥X	Brown	Brown	Brown	Brown	Brown	¥¥	NA	¥	¥X	¥2	¥ X	
Conductivity	2300	KN KN	¥x	1600	1600	¥	¥	1700	1560	1500	1600	1610	KX X	1800	¥N	1490	1500	4	
핆	8.5	¥	¥	7.35	7.62	7.78	¥	7.61	7.63	7.77	7.72	7.69	¥	7.35	¥	7.76	7.75	4	
Cumulative Total (gal)	01	12	37	£3	57	62	63	22	8	103	117	126	126	-	15	×	27	7,	
Amount Removed (gal)	0	7/drv	20	3 • •	16/drv	in	, -	. 0	€2	<u>.</u>	7	· •	¥	-	16/drv	i e	22	4 7	
Method Purged	Ğ	3	-:02	- W 2	Ş			i e c					- C). 5			Pai.	
Date Sampled													4-7-80					4.15.80))
Date Purged	0	2-53-64	6	68-92-6	2-30-89			•	69-7-9					S	6-12-0				

Well No.: 36194

Installation Date: 6-16-89

Depth to Bottom; BGS: 23.6 feet Elevation: 5228.7 feet

Depth to Water; 8GS: 13.5 feet Elevation: 5240.8 feet

Ground Elevation: 5254.3 feet

well pescription: 4-in. PVC

Valume Calculation: $(23.6 - 13.5) \times 0.653 + (23.6 - 13.5) \times 0.591$ 1 Vol = 12.6 gal 5 Vol = 62.8 gal

<u>Geologist</u> 1. Terry	T. Terry D. Bufo	o. Bufo
100 A A A A A	C E B N K K K K K K K K K K K K K K K K K K	₩ # ₩ #
6,000 8A 8A 8A 8A	NA NA NA NA NA NA NA NA NA NA NA NA NA N	2 4 4 2 4
됩 % 점 점	7.83 NA NA 7.44	8.33 NA NA NA
Cumulative <u>Total (gal)</u> 20 30 45	50 53 70 10 20	30 70 70 70
Amount Removed (gal) 20 10/dry 5/dry	3/dry 3/dry 0 17 10	10/dry NA
Method Purged Bail	Bail P⊾mp	Baí (
Date Sampled		7-13-89
<u>Date Purged</u> 6-19-89	6-20-89	

Installation Date: NA

Well Description: 4-in. PVC

Depth to Bottom; BGS: 27.80 feet Elevation: 5222.8 feet

Depth to Water; BGS: 10.5 feet Elevation: 5240.1 feet

Ground Elevation: 5250.6 feet

Volume Calculation: $(27.8 - 10.5) \times 0.653 + (27.8 - 10.5) \times 0.591$ 1 Vol = 21.5 gal 5 Vol = 107.5 gal

Geologist	B. Medenkamp	E. Gonzalez	E. Gonzalez
Color	¥.	yellow	NA NA light yellow
Conductivity	4	1,600	1,600
됩			NA 7.39
Cumulative Total (gal)	0;	ა გ {	2,7%
Amount Removed (gal)	10	5/dry	4 4/dry NA
Method Purged	Pump	Baj!	Baí (
Date Sampled			4-26-89
Date Purged	6-14-89	68-52-7	} }

Installation Date: NA

Well Description: 4-in. PVC

Depth to Bottom; 8GS: 25.7 feet Elevation: 5222.8 feet

Depth to Water; 8GS: 6 feet Elevation: 5242.5 feet

Ground Elevation: 5248.5 feet

Volume Catculation: $(25.7-6) \times 0.653 + (25.7-6) \times 0.591$ 1 Vol = 24.5 gal 5 Vol = 122.5 gal

Geologist	8. Nedenkamp	E. Gonzalez	E. Gonzalez
Color	4	yellow	it. yellow
Conductivity	4	1,410	1,300
핆	44	6.87	7.45
Cumulative Total (gal)	5 8 5	8 8	£ £
Amount Removed (gal)	15/dry 5	יט יט	13/dry Initial
Method Purged	Bail Bail	-60	, <u>, ,</u> , , , , , , , , , , , , , , , ,
Date Sampled			08-76-7
Date Purged	4-19-89	60-07-4	4-25-89

Installation Date: NA

Well Description: 4-in. PVC

Depth to Bottom; BGS: 27.1 feet Elevation: 5220.9 feet

Depth to Water; BGS: 6 feet Elevation: 5242 feet

Ground Elevation: 5248 feet

Volume Calculation: (21.7 - 6) \times 0.653 + (27.1 - 6) \times 0.591 1 Vol = 26.3 gal

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	ر ده
-	8

Geologist	B. Nedenkamp	B. Hedenkamp	B. Hedenkamp	E. Gonzalez
Color	clear	\$ \$:	clear
Conductivity	** **	Y :	1,270	1,270
집	¥ 6	8.35	7.85	7.62
Cumulative Total (gal)	₽ #	c ≻ ?	3 % :	? ?
Amount Removed (gal)	15	~ `	o (» –
Method Furged	Pump	Bail	Bai≀	991
Date Sampled				68-52-7
Date Purged	4-19-89	4-20-89	4-54-89	

Well No.: 01077

Installation Date: 1-3-89

Depth to Bottom; 8GS: 88.7 feet Elevation: 5174.8 feet

Ground Elevation: 5263.5 feet

Depth to Water; BGS: MA Elevation: MA

Well Description: 4-in, PVC

Volume Calculation: NA

Geologist	S. Morrissette	s. Horrissette
Color		S
Conductivity	850 1100 1100 1100 1130 1150	E
됩	7.33 7.59 7.70 7.70 7.70 7.70 7.70	
Cumulative Total (gal)	Initial 0.27 0.55 0.68 1.0 2.0 3.0 4.0 5.0	<u> </u>
Amount Removed (gal)	Initial 0.27 0.28 0.13 0.32 1.0 1.0	
Method Purged	Pump	
Date Sampled	, c	10-7-0
Date Purged	6-2-89	

* Well was purged by Marding Lawson Associates prior to sampling by WCC. HLA supplied pump; all well parameter data was collected by MLA.

Well No.: 01083

Installation Date: 5-12-89

Depth to Bottom; BGS: 16 feet Elevation: 5248.7 feet

Depth to Water; 8GS: 8.2 feet Elevation: 5256.5 feet

Ground Elevation: 5264.7 feet

Well Description: 4-in. PVC 2-in. prepack installed 6-20-89

Volume Calculation: (16 - 8.2) x 0.653 + (16 - 8.2) x 0.591 1 Vol = 9.7 gal 5 Vol = 48.5 gal

Geologist	o. Buto o. Bufo J. Dodson	J. Dodson	J. Dodson	J. Dodson J. Dodson
<u> </u>	Brown NA NA	.	Broun	:
Conductivity	1400 1050 1000	1000 NA 1190	1100 1080 1330	NN 1300 1100
됤	7.43 NA 6.89 7.10	7.14 NA 7.22	7.34 7.38 7.10	¥ ¥ 7.2
Cumulative Total (gal)	6 ½ ½ ½ ½	:	92.1 109.1 109.1	119.1 125.1 142.1 142.6
Amount Removed (gal)	6 15 20/dry 10	20 2 3.1/dry	Initial 17 Initial	10/dry 6/dry 17/dry 0.5
Method Purged	Pimp Bail Bail	durid	Bail	Pumo/Bail Bail
Date Sampled				6-13-89
Date Purged	5-24-89 5-24-89 5-26-89	5-30-89	6-6-9	6-12-89

Depth to Water; BGS: 7.6 feet Elevation: 5255.9 feet

Ground Elevation: 5263.5 feet

Depth to Bottom; BGS: 19.5 feet Elevation: 5244 feet

Well No.: 01503

Installation Date: NA

Well Description: 4-in. PVC

Volume Calculation: (19.5 - 7.6) \times 0.653 + (19.5 - 7.6) \times 0.591 t Vol = 14.8 gal 5 vol = 74 gal

Geologist	S. Morrissette	S. Morrissette	S. Morrissette
Color	¥ :	¥ ¥ :	≨ ≨
Conductivity	1800	000 0181	1800 1800
퓝		1.68	
Cumulative Iotal (gal)	Initial	0 8 9	22
Amount Removed (gal)	Initia	40/dry 18/dry	16/dry 0
Method Purged	dund	dund	Bail
Date Sampled			6-2-89
Date Purged	4-1-80	4-2-80	

* Well was pumped dry 3 times 6-1-89. Volumes No.1 & No. 2 were not noted.

Well No.: 01504

Installation Date: NA

Ground Elevation: 5263.3 feet

Depth to Water; BGS: 8 feet (5-3-89)
7.5 feet (5-31-89)
Elevation: 5255.3 feet
5255.8 feet

Depth to Bottom; BGS: 18.9 feet Elevation: 5244-4 feet

Well Description: 4-in. PVC

Volume Calculation: (18.9 - 8) \times 0.653 + (18.9 - 8) \times 0.591
1 Vol = 13.6 gal
5 Vol = 67.8 gal
(18.9 - 7.5) \times 0.653 + (18.9 - 7.5) \times 0.591
1 Vol = 14.2 gal
5 Vol = 71 gal

Geologist	B. Medenkamp				B. Hedenkamp	S. Morrissette				S. Morrissette
Color	¥	××	¥	¥¥	ď Z	NA NA	¥	4 2	¥2	¥
Conductivity	5200	0009	2900	KA	۲×	0099	¥	9700	¥	₹
됩	12.4	12.4	12.5	¥.	¥	12.61	¥	12.57	¥,	¥
Cumulative Total (gal)	15	\$	35	37	37	8 2	7,5	55	71	۲
Amount Removed (gal)	15	10	5	2	××	28/dry	14/dry	13/dry	16	NA NA
Method Purged	Pump				Bail	Pump				Bail
Date Sampled					5-3-89					5-31-89
Date Purged	5-3-89					5-31-89				

Well No.: 01524

Installation Date: NA

Well Description: 4-in. PVC

Depth to Bottom; 8GS: 22.3 feet Elevation: 5240.7 feet

Depth to Water; 8GS: 5.3 feet Elevation: 5257.7 feet

Ground Elevation: 5263 feet

Volume Calculation: (22.3 - 5.3) \times 0.653 + (22.3 - 5.3) \times 0.591 1 Vol = 21.1 gal 5 Vol = 105.7 gal

Geologist	J. Dodson				J. Dodson
Color	brown	pro-pro-	brown	¥	ΝA
Conductivity	1000	88	900	¥	KA K
됩	7.89	8.06	8.16	¥	¥Z
Cumulative Total (gal)	بر در در	32 52	3	7	7.
Amount Removed (gal)	rv å	5 र ू	82	=	4 7
Method Purged	Bail*				Bail
Date Sampled					5-25-89
Date Purged	5-25-89				

* Well was bailed dry twice while purging. Volumes when well went dry were not noted.

APPENDIX J
SOIL AND GAS SAMPLING RESULTS

SOIL GAS AND SOIL SAMPLING RESULTS ROCKY MOUNTAIN ARSENAL

	CONIMENTS									٠							
CONC'S REPORTED IN ug/1 FOR SOIL GAS AND ug/kg FOR SOIL	w										•	•					
) ug/kç	O- XYLENE	<0.01	<0.01	0.05	0.03	0.01	<0.01	<0.0>	0.02	6	0.00	0.00	0.04	0.02	0.01	0.03	0.04
AKSENAL Y, CO L GAS ANI	ETHYL M&P BENZENE XYLENES	<0.01	0.01	0.15	0.04	0.02	<0.01	10.0	0.07	Š	0.0	0.12	0.10	0.06	0.04	0.10	0.08
ERCE CIT FOR SOI	TOLUENE ETHYL BENZENE	0.02	<0.01	0.05	0.01	0.02	0.03 0.03	10.05	0.01	0	0.01	0.03	0.03	0.03	0.01	0.04	0.03
COMP IN ug/1	TOLUENS	<0.01	0.01	0.12	0.03	0.07	0.03))	0.05	0.04	0.03	0.05	0.04	0.09	0.04		80.0
PORTED	BEN- ZENE	<0.01	0.01	0.02	0.01	<0.01	0.0 0.0 0.0 0.0	?	<0.01	0.01	0.01	0.03	0.03	0.01	0.01	20.0	0.02
c's RE	1,1 OCE	<0.01	<0.03	0.06	0.03	<0.01 0.02	0.09		0.07	0.02	<0.01	0.02	0.05	<0.01	, 0.0 , 0.0	200	
CON	1,2 DCA	.01 <0.01 <0.01 <0.01 <0.01 <0.01	0.01	0.02	0.01	70.07	0.05		<0.01	<0.01	<0.01	0.01	<0.01	<0.01	10.0 0.0		70.0/
	1,2 cis OCE	<0.01	<0.01				0.57		0.83		0.02				0.01		
	1,2 trans OCE	<0.01	0.01	0.01	20.02	0.07	\$.0.0 \$.0.0	•	<0.03	<0.01	<0.01	0.01	0.0		0.02	<0.03	• • •
	TCE	<0.01	<0.01	0.05	0.33	ر د ا	23.9	•	8.02	36.3	16.8 	2.11	ς τ. τ 2 ο ο	ν.ς 	· .	22.4	,
	LOCATION .	FB7JULY89 SAMPLING TRAIN	FB7JULY39 ATMOSPHERIC	65 @ 5′ 65 @ 10′			പ		15'8	ල (~	65 F F 6 20'	۷ ر ا ۲ ر	. c	2	G5 5.25 @	10,

SOIL GAS AND SOIL SAMPLING RESULTS
ROCKY MOUNTAIN ARSENAL
COMMERCE CITY, CO

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CONC'S REPORTED
CONC'S
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COMMENTS			1,1,1 TCA ALSO DETECTED							1,1,1 TCA ALSO DETECTED
O-XYLENE	0.08	0.02	0.01	<0.01	0.04	0.01	0.0	0.05	0.05	0.08
ETHYL M & P BENZENE XYLENES	0.21	0.04	0.02	0.01	0.09	60.0	0.15	0.13	0.09	0.21
ETHYL BENZENE	0.06	0.01	0.01	<0.01	0.03	0.03	0.07	0.04	0.03	0.06
TOLUENE ETHYL BENZEN	0.29	0.05	0.05	0.01	0.08	0.08	0.09	0.12	0.09	0.09
BEN- Zene	0.10	0.04	0.11	<0.01	0.03	0.03	0.03	0.04	0.04	
1,1 DCE	<0.01	<0.01	<0.01 0.11	<0.01 <0.01	<0.01 <0.01	0.00		<0.01	<0.01	0.10
1,2 DCA	<0.01	<0.01	<0.01	0.01	0.03	0.01	.02	0.01	<0.01 <0.01 0.04	<0.01 <0.01
1,2 cis OCE	<0.01	<0.01			<0.01 <0.01	<0.01 <0.01	<0.01	0.04		<0.01
1,2 trans o	<0.01 <0.01 <0.01 <0.01 0.10	<0.01 <0.01 <0.01 <0.01 0.04	<0.01 0.07	<0.01 3.13	<0.01 <0.01 <0.01 <0.01	0.00	<0.01	.0.0×	<0.01 0.03	<pre><0.01 <0.01 <0.01 0.10 0.03 <0.01 <0.01 <0.01 <0.01 0.01 0.01</pre>
TCE	0.01	<0.01	16.4	19.1	5.30				3.92	8.95
LOCATION	FSBJULY SAMPLING TRAIN	FB8JULY ATMOSPHERIC	65 5.25 @ 15'	GS 5.75 @ 15′	65.5 @ 15' 65 @ 15' 65 & @ 15'	G7 @ 15'A	67 @ 15'8 62 5.5 5 6	15'A	G2.5-5.5 @ 15'8	GS S @ 15 GS @ 5′8

SOIL GAS AND SOIL SAMPLING RESULTS
ROCKY MOUNTAIN ARSENAL
COMMERCE CITY, CO
CONC'S REPORTED IN ug/1 FOR SOIL GAS AND ug/kg FOR SOIL

	COMMENTS	0.45uG/1 1,1,1 TCA & 0.01 PCE	3.66 uG/l 1,1,1 TCA			PCE = 1.31 uG/1 PCE = 0.75 uG/1	
700 US : 6: //	O- S XYLENE	0.04	0.15	0.40	0.03	0.05 0.07 0.01 0.01 0.01 0.01 0.06	
	H & P XYLENES	60.0	0.29	0.98	0.07	0.00	
	ETHYL BENZENE	0.04	0.11	0.31	0.02	0.07 0.03 0.01 0.01 0.02 0.02 0.02	
	TOLUENE	<0.01	0.12	0.28	0.07	0.00	
	BEN- ZENE	0.01	0.05	0.03	0.08	0.001	
	1,1 DCE	01 <0.01 0.01	01 <0.01 0.05	<0.01 0.03	<0.01 0.08	00000000000000000000000000000000000000	
	1,2 DCA	<0.01		<0.01	<0.01	<pre></pre>	
	1,2 cis OCE	0.07	<0.01	<0.01	<0.01 <0.01 <0.	00000000000000000000000000000000000000	
	1,2 trans OCE	<0.01 0.07	<0.01 <0.01 <0.	<0.01 <0.01 <0.	<0.01	000000000000000000000000000000000000000	
	TCE	25.5	10.0	<0.01	<0.01	<pre><0.01 <0.01 <0.01 0.80 0.32 0.05 0.06 1.11 <0.01</pre>	
	LOCATION	502.2 G5 5.25 @ 10'8 502.2	G5 5 @ 15'8 502.2	FBBJULY II SAMPLING TRAIN	FBBJULY89 II ATMOSPHERIC		

SOIL GAS AND SOIL SAMPLING RESULTS
ROCKY MOUNTAIN ARSENAL
COMMERCE CITY, CO
CONC'S REPORTED IN ug/1 FOR SOIL GAS AND ug/kg FOR SOIL

	COMMENTS											•	ı			
o me ug/ kg rok soll	O- S XYLENE	0.02	0.02	0.01	0.03	40.0	50.0	0.03	0.10	0.01	0.04	0.04	0.01	0.03	0.01	0.01
	M & P E XYLENES	0.06	0.01	0.03	0.00	50.0	0.03	0.05	0.31	0.02	0.10	0.05	0.01	0.08	0.02	0.03
	E ETHYL BENZENE	0.02	0.01	0.01	20.0	0.03	0.05	0.01	60.0	0.01	0.02	0.02	0.02	0.03	0.01	0.01
;	TOLUENE	0.08	0.05	0.28	20.0	<0.01	0.07	0.02	0.17	0.03	0.04	0.03	<0.10	0.11	0.03	0.04
	BEN. ZENE	0.09	0.02	0.05		0.0	0.01	0.01	0.03	0.02	0.01	0.01	0.0	0.06	0.01	0.01
	1,1 DCE	0.01	<0.01	0000	<0.07	<0.01	<0.01	<0.01	<0.0>	<0.01	<0.01	<0.01	<0.0 ¹	<0.01	<0.01 <0.01	<0.01
	1,2 DCA	<0.01	<0.01 60.01							<0.01	<0.01	<0.01	<0.0>	<0.01	<0.01 <0.01	<0.01
	1,2 cis OCE	<0.01	40.01		\$0.0 0.0	<0.01	<0.03	\$0.03 10.03	<0.0>	<0.01	<0.01	.0°0>	<0.0>	<0.01	<0.01 <0.01	<0.01
	1,2 trans OCE	<0.01	<0.01 60.01	\$0.07 \$0.01	<0.01	<0.01	<0.01	40.01 50.01	10.05	<0.01	<0.01	20.05	10.05	<0.01		<0.01
	1CE:	<0.01	3.25	<0.01	<0.01	<0.01	<0.01	. c		<0.01	1.82	10.0	10.01	<0.01	<0.01 0.03	0.03
	LOCATION	FB9JULY89 ATMOSPHERIC	F6 @ 15' I7 @ 15'	F4 @ 15'	05 @ 15'	D7 @ 15'	010 @ 15.	FR9.1111 YA9 11	SAMPLE TRAIN	FB9JULY39 II ATMOSPHERIC	F14 @ 15'	FB10.3111 YAQ	ATMOSPHERIC	FBIOJULY89 SAMPLE TRAIN	112 @ 15' 18 @ 15'A 18 @ 15'O	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

SOIL GAS AND SOIL SAMPLING RESULTS
ROCKY MOUNTAIN ARSENAL
COMMERCE CITY, CO
CONC'S REPORTED IN ug/l FOR SOIL GAS AND ug/kg FOR SOIL

COMMENTS	ND = NOT DETECTED, BURIED IN TCE	
O- XYLENE	0.01 0.01 0.01 0.01 0.02 0.03 0.05 0.05 0.05))
ETHYL M & P O- BENZENE XYLENES XYLENE	0.03 0.03 0.02 .25 .25 .0.01 0.04 0.04 0.04 0.04 0.09 0.09)
ETHYL BENZENE	0.01 0.08 0.27 0.01 0.01 0.01 0.03 0.05 0.05	1
TOLUENE ETHYL BENZE	0.02 0.04 0.02 ND 0.01 0.01 0.03 0.05 0.05	
BEN- NE	0.01 0.02 .01 .01 .001 0.01 0.05 0.05 0.05	
1,1 DCE	<pre><0.01 <0.01 <0.05 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.08 0.08 0.08 <0.05 </pre>	
1,2 DCA	 (0.01 < 0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 (0.02 (0.03 < 19.9 (0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 < 0.01 (0.01 < 0.01 < 0.01 < 0.01 < 0.05 (0.05 (0.06 (0.01 < 0.01 < 0.01 < 0.05 (0.02 (0.03 (0.04 < 0.01 < 0.01 < 0.05 (0.05 (0.05 (0.05 (0.05 (0.05 (0.05 (0.05 	
	<pre><0.01 <0.01 19.9 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.05 <0.01 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.01 <0.05 <0.05 <0.01 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0</pre>	
1,2 1,2 trans cis OCE OCE	 <pre></pre> <pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	
TCE	12.2 0.01 13.7 154 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 0.02 1.67 1.05 1.05 2.88	
LOCATION	H5.5 @ 15' H12 @ 15' H5 @ 15' G0.75-5.5 @ 15'8 FB10JULY II SAMPLE TRAIN FB10JULY II ATMOSPHERIC D12 @ 15' FB11JULY39 SAMPLING FB11JULY39 SAMPLING TRAIN FB11JULY39 ATMOSPHERIC J10 @ 15' H4 @ 15' H7 @ 15' G8 @ 15'	

SOIL GAS AND SOIL SAMPLING RESULTS
ROCKY MOUNTAIN ARSENAL
COMMERCE CITY, CO
COMMERCE CITY, CO

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COMMENTS		ND = NOT DETECTED, BURIED IN TCE PEAK
M & P O- XYLENES XYLENE	0.02 0.02 0.01 0.03 0.03 0.03 0.03	0.02 0.01 0.02 0.02 0.04
M & P E XYLENES	0.05 0.06 0.08 0.15 0.09 0.09 0.09	0.04 0.03 0.05 0.10
ETHYL BENZENE	0.03 0.06 0.07 0.07 0.03 0.03	0.02 0.02 0.01 0.02 0.04
TOLUENE ETHYL BENZE	0.05 0.03 0.04 0.05 0.05 0.05	ND . 0.03
BEN- Zene	0.04 0.04 0.03 0.03 0.04 0.03 0.14	<0.010.030.050.020.02
1,1 DCE	 60.01 < 0.01 < 0.01 < 0.01 60.01 < 0.01 0.02 < 0.01 60.01 < 0.01 0.02 < 0.01 60.01 < 0.01 < 0.01 0.02 60.01 < 0.01 < 0.01 0.02 60.01 < 0.01 < 0.01 < 0.01 60.01 < 0.01 0.01 < 0.01 60.01 < 0.01 0.01 < 0.01 60.01 < 0.01 < 0.01 < 0.01 60.01 < 0.01 < 0.01 < 0.01 60.01 < 0.01 < 0.01 < 0.01 60.01 < 0.01 < 0.01 < 0.01 	 <0.01 <0.03 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01
1,2 DCA	<pre><0.01 0.02 <0.01 <0.01 <0.01 0.01 0.01 <0.01 <0.01 <0.01</pre>	<0.01 <0.01 <0.01 <0.01 0.02
1,2 cis DCE	<pre><pre><0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 </pre></pre>	<pre><0.01 2.61 27.9 <0.01 <0.01 <0.01</pre>
1,2 trans OCE	<pre><0.01 <0.01 <0.01 <0.01 <0.01 0.02 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 0.01 <0.01 <0.01 0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01</pre>	•
TCE	0.01 0.05 0.05 0.05 0.01 0.02 0.01 0.01	0.39 268 603 <0.01 0.68 1.38
LOCATION	E3 @ 15' J8 @ 15' J5 @ 15'A J5 @ 15'A J5 @ 15'A FB11JULY II SAMPLE TRAIN C12 @ 15' F16 @ 15' F18 @ 15' F812JULY39 SAMPLING TRAIN F812JULY39 ATMOSPHERIC	G10 @ 15' G5.9-5.7 @ 15'8 G5.60-5.70 F813JULY89 ATMOSPHERIC G14 @ 15' G12 @ 15'

SOIL GAS AND SOIL SAMPLING RESULTS
ROCKY MOUNTAIN ARSENAL
COMMERCE CITY, CO
COMMERCE CITY, CO

COMMENTS		
O- XYLENE	0.01 0.02 0.02 0.03 0.03 0.04 0.04	
ETHYL M&P BENZENE XYLENES	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	
TOLUENE	0.03 0.03 0.03 0.02 0.02 0.03 0.05 0.05 0.05	
BEN- ZENE	0.02 0.02 0.02 0.02 0.02 0.01 0.01 0.04 0.03	
1,1 DCE	0.01 0.02 0.52 0.52 0.52 0.01 0.05 0.01 0.00 0.00 0.01 0.00 0.01 0.01 0.00 0.01 0.00	
1,2 OCA	<pre></pre>	
1,2 cis OCE	00000000000000000000000000000000000000	
1,2 trans OCE	0.0000000000000000000000000000000000000	
TCE	0.14 0.50 0.83 0.38 0.01 0.01 0.04 0.05 0.05 0.05 0.05 0.01 0.05	
LOCATION	D16 @ 15' D18 @ 15' E14 @ 15' E16 @ 15' H3 @ 15'A H3 @ 15'A H3 @ 15'A H3 @ 15'A H3 @ 15'A E13JULY39 SAMPLING TRAIN E19 @ 15' E10 @ 15' H16 @ 15' F14JULY39 SAMPLING TRAIN FB14JULY39 SAMPLING TRAIN FB14JULY39 CAMPLING TRAIN FB14JULY39 CAMPLING TRAIN FB14JULY39 CAMPLING TRAIN FB14JULY39 CAMPLING TRAIN FB14JULY39 CAMPLING TRAIN FB14JULY39 CAMPLING TRAIN FB14JULY39 CAMPLING TRAIN FB14JULY39 CAMPLING TRAIN FB14JULY39 CAMPLING TRAIN	

	SOIL	COMMENTS	1,1,1 TCA 50.0ML SAMPLE	100.0ML SAMPLE	50.0ML SAMPLE	100.0 SAMPLE	ND - NOT DETECTED BURIED IN TCE PEAK			50.0ML SAMPLE	100.0ML SAMPLE	
.TS	3/kg FOR	O- XYLENE	0.02	0.04	0.08	<0.01	0.03	90.0	0.01	0.12	0.01	0.09 1.30 9.20
SOIL GAS AND SOIL SAMPLING RESULTS ROCKY MOUNTAIN ARSENAL	CO AS AND U	ETHYL M & P O- BENZENE XYLENES XYLENE	0.08	0.10	0.17	0.02	90.0	0.13	0.02	0.20	0.01	0.18 2.55 4.94
L SAMPL	CONC'S REPORTED IN UG/1 FOR SOIL GAS AND UG/KG FOR SOIL	ETHYL BENZENE	0.03	0.04	0.08	<0.01	0.05	0.07	0.01	0.12	0.01	0.01 1.00 3.68
AND SOI	ug/1 FO	TOLUENE ETHYL BENZE	0.02	0.05	0.08	S.	55 52	0.01	0.01	0.04	0.01	0.34 0.52 0.76
IL GAS	red in	BEN- ZENE	0.02	0.04	0.08	0.02	0.03	0.04	0.01	0.08	0.03	0.13 0.27 1.44
SO	REPOR	1,1 DCE	0.38	<0.01 <0.01	<0.01	<0.01	<0.01	<0.01 0.04	<0.01	0.43	0.12	<0.01 <0.01 <0.01
	CONC'S	1,2 DCA	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	0.04	0.10	<0.01 <0.01 <0.01
		1,2 cis DCE	<pre><0.01 <0.01 <0.01 0.38 <0.01 6.34 <0.01 <0.01</pre>	6.28	<0.01 <0.01 <0.01 <0.01	<0.01 <0.01 <0.01 <0.01 0.02	<0.01 17.2 <0.01 <0.01 0.03	<0.01 <0.01 0.04	<0.01 <0.01 <0.01 <0.01 0.01	<0.01 18.9		0.09 <0.01 <0.01 <0.01 0.13 <0.01 <0.01 0.27 <0.01 3.54 <0.01 <0.01 1.44
		1,2 trans DCE	<0.01 <0.01	<0.01 6.28	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01 14.8	0.09 <0.01 <0.01
		TCE	0.03 55.4	63.9	140	107	862	0.35	0.13	136	87.5	<0.01 <0.01 151
		LOCATION	H4.5 @ 15' G5.6-5.7 @ 30'A	65.6-5.7 @ 30'8	G5.6-5.7 2 15'A	65.6-5.7 2 15'8	65.6-5.7 @ S'	F814JULY II SAMPLE TRAIN	FB14JULY II ATMOSPHERIC	65.6-5.7 @ 15'A	65.6-5.7 @ 15′8	H2O BLANK RINSATE # 1 G5.6-5.7 @

SOIL GAS AND SOIL SAMPLING RESULTS
ROCKY MOUNTAIN ARSENAL
COMMERCE CITY, CO
CONC'S REPORTED IN ug/l FOR SOIL GAS AND ug/kg FOR SOIL

COMMENTS				
O- XYLENE	0.82	7.57	4.56	
BEN- TOLUENE ETHYL M & P O- ZENE BENZENE XYLENES XYLENE	2.45	9.46	5.57	
ETHYL BENZENE	0.82	4.91	8.14	
TOLUENE	0.43	9.63	3.05	
BEN- Zene	0.23	8.60	1 2.38	
1,1 OCE	<0.01	<0.01	<0.0>	
1,2 0CA	:0.01 0.98 <0.01 <0.01 0.28 0.48	2.80 17.4 4.30 <0.01 8.60 9.68	<0.01 4.55 <0.01 <0.01 2.38 3.05	
1,2 cis OCE	0.98	17.4	4.55	
1,2 1,2 1,1 E trans cis OCA OCE 7 OCE OCE	<0.01	2.80	<0.01	
TCE	67.7	450	389	
LOCATION .	30' SOIL G5.6-5.7 @	5, SOIL G5.6-5.7 @	15'A SOIL GS.6-5.7 @	15'B SOIL

APPENDIX K TARGET ANALYTES LIST

APPENDIX K

Method

Organo Sulphur Compounds/GCFPD

Analyte

DMDS Dimethyl Disulfide
OXAT Oxathiane
DITH Dithiane
BTZ Benzothiazole

CPMS 4-Chlorophenylmethyl sulfide
CPMSO 4-Chlorophenylmethyl sulfoxide
CPMSO2 4-Chlorophenylmethyl sulfone

Method

Volitile Aromatic Organic Compounds/GCFPD

Analyte

C6H6 Benzene Toluene MEC6H5 Chlorobenzene CLC6H5 Ethylbenzene ETC6H5 13DMB 1,3-Dimethylbenzene/M-xylene **XYLEN Xylenes** 1,2-Dichlorobenzene 12DCLB 13DCLB 1,3-Dichlorobenzene 14DCLB 1,4-Dichlorobenzene

Method

Semivolatile Organic Compounds/GCMS

Analyte

13DBD4 1,3-Dichlorobenzene-D4
2CLPD4 2-Chlorophenol-D4
ALDRN Aldrin

ATZ Atrazine

CL6CP Hexachlorocyclopentadiene

CLDAN Chlordane

CPMS 4-Chlorophenylmethyl Sulfide

CPMSO 4-Chlorophenylmethyl Sulfoxide
CPMSO2 4-Chlorophenylmethyl Sulfone
DBCP Dibromochloropropane

DCPD Dicyclopentadiene

DDVP Vapona

DEPD4 Diethyl Phthalate-D4

DIMP Diisopropylmethyl Phosphonate

DITH Dithiane
DLDRN Dieldrin

DMMP Dimethylmethyl Phosphate DNOPD4 DI-N-Octyl Phthalate-D4

ENDRN Endrin
ISODR Isodrin
MLTHN Malathion
OXAT 1,4-Oxathiane

PPDDE 2,2-BIS (Para-Chlorophenyl)-1,1-Dichloroethene PPDDT 2,2-BIS (Oara-Chlorophenyl)-1,1,1-Trichloroethane

PRTHN Parathion

SUPONA Supona/2-Chloro-1-(2,4-Dichlorophenyl) Vinyl Diethyl Phosphate

Method

Organochlorine Pesticides/GCECD

Analyte

ALDRN Aldrin

CL6CP Hexachlorocyclopentadiene

CLDAN Chlordane
DLDRN Dieldrin
ENDRN Endrin
ISODR Isodrin

PPDDE 2,2-BIS (Para-Chlorophenyl)-1,1-Dichloroethese PPDDT 2,2-BIS (Para-Chlorophenyl)-1,1,1-Trichloroethane

Method

Dibromochloropropane/GCECD

Analytc

DBCP Dibromochloropropane

Method

Volatile Halogenated Organic Compounds/GCCON

Analytc

BCHPD Bicyclo [2,2,1] Hepta-2,5-Diene

DCPD Dicyclopentadiene
MIBK Methylisobutyl Ketone

Method

Volatile Organic Compounds/GCMS

Analyte

1.1.1-Trichloroethane 111TCE 1,1,2,2-Tetrachloroethane TCLEA 1,1,2-Trichloroethane 112TCE 1,1-Dichloroethane 11DCLE 1,1-Dichloroethylene/1,1-Dichloroethene 11DCE 1,2-Dichlorobenzene and 1,4-Dichlorobenzene DCLB 1,2-Dichloroethane 12DCLE 1,2-Dichloroethane-D4 12DCD4 1,2-Dichloroethylenes (CIS and Trans Isomers) 12DCE 1,2-Dichloropropane 12DCLP 1,3-Dichlorobenzene 13DCLB 1.3-Dichloropropane 13DCP 2, Chloroethylvinyl Ether/(2-Chloroethoxy) Ethene 2CLEVE Benzene C6H6 Bromodichloromethane **BRDCLM** Bromoform CHBR3 Carbon Tetrachloride CCL4 Chlorobenzene CLC6H5 Chloroethane C2H5CL Chloromethane CH3CL Dibromochloromethane DBRCLM Chloroform CHCL3 Ethylbenzene-D10 ETBD10 Methylene Chloride CH2CL2 Methylene Chloride-D2 CD2CL2 Tetrachloroethylene/Tetrachloroethene TCLEE Toluene-D8 MEC6D8 Trichloroethylene/Trichloroethene TRCLE Chloroehtene/Vinyl Chloride C2H3CL ACRYLO Acrylonitrile CCL3F Trichlorofluoromethane

1,3-Dimethylbenzene/M-Xylene

Methylethyl Ketone/2-Butanone

Methylisobutyl Ketone

Xylenes Acetone

13dmb Xylen

ACET

MEK

MIBK

CH3BR

Bromomethane

MEC6H5 ETC6H5 Toluene Ethylbenzene

DMK

Dimezhylketone

Method

Volatile Hydrocarbon Compounds/GCFID

Analytc

BCHPD

Biocyclo [2,2,1] Hepta-2,5-Diene

DCPD MIBK Dicyclopentadiene Methylisobutyl Ketone

Method

Mctals/ICP

Analyte

CA Calcium CD Cadmium CR Chromium CU Copper K Potassium Magnesium MG Sodium NA PB Lead ZNZinc

Method

Arsenic/AA

Analyte

AS

Arsenic

Method

Mercury/AA

Analyte

HG

Mercury